Air Quality Monitoring in the County of Grande Prairie
April 8 to 21, 1999

Alberta Environment is currently conducting an intensive air quality monitoring survey in the County of Grande Prairie. Its objectives are to: (1) determine maximum air pollutant levels in the region; (2) map the distribution of air quality within the County; and (3) compare air pollutant levels in the County with air quality guidelines and with air pollutant levels at other locations in Alberta. The monitoring survey was initiated in December 1998 and is expected to be complete by the end of the 1999 calendar year. It is part of an unannounced, routine air quality monitoring program that is conducted throughout the province by Alberta Environment.

The Alberta Environment Mobile Air Monitoring Laboratory (MAML) was used to monitor air quality on 12 days in April 1999 at 26 locations in the County of Grande Prairie. Monitoring was conducted in a broad rural area west, northwest and northeast of the City of Grande Prairie between Townships 70 and 76 to the Alberta/British Columbia border. The focus of this monitoring was to collect air quality data downwind of industrial facilities and at communities in the area. Air quality parameters monitored by the MAML during this survey included sulphur dioxide, hydrogen sulphide, total reduced sulphur, hydrocarbons, particulates, oxides of nitrogen, ozone, carbon monoxide and ammonia. Additional air quality monitoring was conducted using other monitoring techniques (identified on Page 2) at locations where elevated air pollutant levels were measured.

The following report is a summary of air quality monitoring conducted in April 1999. A report summarizing the results of the December 1998 survey in the County of Grande Prairie is also available from Alberta Environment. Additional monitoring will be conducted using the MAML and other monitoring techniques in the summer and fall of 1999.

Major Findings

(1) Concentrations of air pollutants measured in the County of Grande Prairie were all below their respective ambient air quality guidelines. Alberta has one-hour air quality guidelines for sulphur dioxide, hydrogen sulphide, ozone, nitrogen dioxide, carbon monoxide and ammonia. Maximum one-hour concentrations for these pollutants were:

- 25% of the one-hour guideline for sulphur dioxide;
- 60% of the one-hour guideline for hydrogen sulphide;
- 68% of the one-hour guideline for ozone;
- 20% of the one-hour guideline for nitrogen dioxide;
- 8% of the one-hour guideline for carbon monoxide; and
- 1% of the one-hour guideline for ammonia.

(2) Sulphur dioxide concentrations were generally low at most monitoring locations. The highest concentration was recorded at Site #20 (10 km northeast of La Glace) from 1:25 to 2:29 p.m. (MST) on April 16. The maximum one-hour and five-minute concentrations at this location were 0.043 and 0.069 ppm (parts per million), respectively. These values are well below the sulphur dioxide one-hour guideline of 0.170 ppm.

(3) Hydrogen sulphide and total reduced sulphur concentrations were low during the monitoring period. Maximum levels of these pollutants were measured at Site #21 (5 km west of Teepee Creek) from 10:21 to 11:21 a.m. (MST) on April 9. One-hour hydrogen sulphide and total reduced sulphur concentrations during this time period were 0.006 and 0.005 ppm, respectively. Both of these values are below the hydrogen sulphide one-hour guideline of 0.010 ppm. Hydrogen sulphide and total reduced sulphur levels were 0.003 ppm or lower for the remainder of the monitoring period.

(4) Elevated hydrocarbon concentrations were measured at Site #26 (11 km northeast of Valhalla Centre) from 11:06 a.m. to 12:22 p.m. (MST) on April 19. The maximum one-hour total hydrocarbon concentration at this time was greater than 13 ppm. This concentration is about 6.5 times higher than natural background levels (2.0 ppm) but still well below air quality guidelines for individual hydrocarbon compounds. Elevated hydrocarbon levels at Site #26 were likely caused by emissions from an industrial facility located upwind of the monitoring unit. Two air samples collected at this

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location showed that concentrations of benzene, toluene, ethylbenzene and xylenes (referred to as BTEX compounds) were well below air quality guidelines for Alberta and Ontario. The highest benzene concentration in these samples was 3.3 $\mu g/m^3$ (micrograms per cubic metre). The interim one-hour guideline for benzene in Alberta is 30 $\mu g/m^3$.

(5) Slightly elevated total hydrocarbon values were recorded at Site #1 (2 km southwest of Elmworth), Site #9 (8 km north-northwest of Hythe), Site #11 (6 km northeast of Hythe), and Site #13 (12 km north of Valhalla Centre), Site #16 (10 km northwest of La Glace) and Site #19 (10 km south-southwest of La Glace). Maximum one-hour total hydrocarbon concentrations at these locations were between 2.6 and 3.3 ppm. Sources of hydrocarbons at these locations were likely fugitive emissions, or leakages, from nearby industrial facilities. Additional air samples taken at these locations showed that concentrations of BTEX compounds were below guidelines established in Ontario and Alberta. The maximum benzene concentration in these samples was 10.0 $\mu g/m^3$ which is one-third of Alberta's interim one-hour guideline.

(6) Elevated particulate levels were recorded at Site #6 (19 km northwest of Hythe), Site #19 (10 km south-southwest of La Glace), Site #16 (10 km northwest of La Glace), Site #1 (2 km southwest of Elmworth) and Site #10 (Hythe). Maximum one-hour total suspended particulate concentrations were greater than 100 $\mu g/m^3$ at these locations. The highest particulate values were recorded at Site #19 from 3:16 to 4:18 p.m. (MST) on April 18 when the one-hour average total suspended particulate concentration was 1099 $\mu g/m^3$. Inhalable (PM_{10}) and respirable ($PM_{2.5}$) particulate concentrations at this time were 669 and 63 $\mu g/m^3$, respectively. Currently, there are no one-hour guidelines for particulates in Canada. However, the 24-hour guideline for total suspended particulates in Alberta is 100 $\mu g/m^3$. Elevated particulate concentrations measured in this survey were caused by road dust from vehicle traffic travelling near the monitoring sites.

Monitoring Method

The MAML was used to monitor air quality in the County of Grande Prairie on April 8 to 13 and April 16 to 21, inclusive. The MAML is a 27-foot (8.2 m) vehicle that has been specially designed and equipped to measure air quality. It houses a variety of instruments that continuously sample the air at specified time or distance intervals. The MAML is equipped with:

- a dual computer system custom-programmed to control the measurement of air samples from each analyzer;
- a GPS (Global Positioning System) that will identify the MAML's location as it moves around Alberta;
- an exhaust purifying system that minimizes emissions from the vehicle; and
- two on-board generators that also are equipped with exhaust scrubbers.

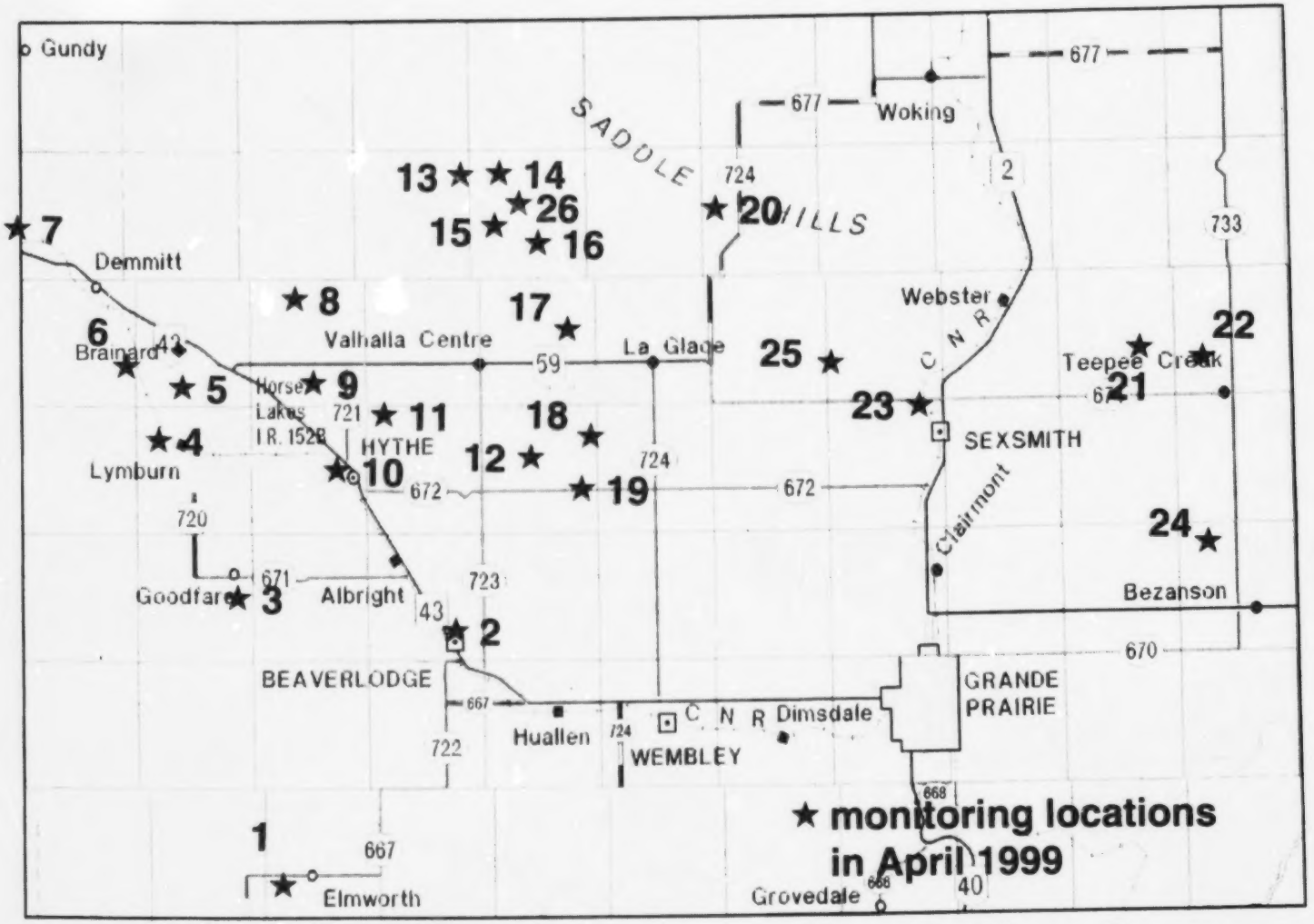
The following parameters were measured by the MAML in the County of Grande Prairie:

- sulphur dioxide (SO_2);
- hydrogen sulphide (H_2S);
- total reduced sulphur (TRS);
- total hydrocarbons (THC);
- reactive hydrocarbons (RHC);
- polycyclic aromatic hydrocarbons (PAHs);
- methane (CH_4);
- ozone (O_3);
- nitrogen dioxide (NO_2);
- nitric oxide (NO);
- total oxides of nitrogen (NO_x);
- total suspended particulates (TSP);
- inhalable particulates (PM_{10});
- respirable particulates ($PM_{2.5}$);
- carbon monoxide (CO);
- ammonia (NH_3);
- wind direction and speed;
- temperature; and
- relative humidity.

In addition to using the MAML, Alberta Environment collected air samples using Carbotrap tubes to further identify different types of hydrocarbons. The Carbotrap tube consists of a glass tube 10.6 cm long with a 0.4 cm inside diameter packed with an adsorbent medium called Carbotrap. Air is passed through this tube at a low flow rate (about 50 to 100 cm^3/min) for a defined period of time, usually 1 to 24 hours. The Carbotrap is specifically formulated to adsorb a number of different hydrocarbon species. The tube then undergoes laboratory analysis by

gas chromatography/mass spectroscopy to quantify ambient concentrations of the hydrocarbons of interest. This monitoring method conforms with the U.S. Environmental Protection Agency Compendium Method TO-17.

A total of 26 air samples were collected using Carbotrap tubes from April 8 to April 21. These samples were collected primarily at locations where: (1) elevated hydrocarbon concentrations were measured by the MAML; or (2) odours were detected by the air quality technologists. These samples were analyzed for benzene, toluene, ethylbenzene and xylenes, often referred to as BTEX. Further analysis of some of these samples is currently underway to determine concentrations of additional hydrocarbons and sulphur compounds. Results of air samples collected using Carbotrap tubes will be presented in the final report for the Grande Prairie survey. The final report will be produced after the fall 1999 portion of the survey is complete.

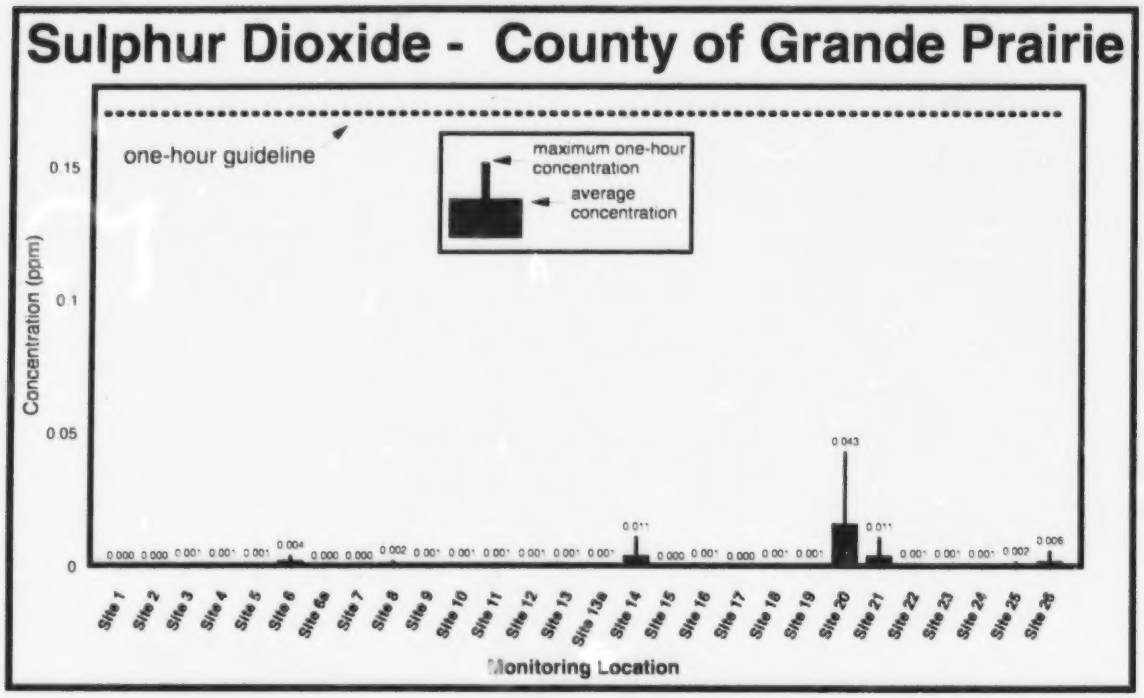


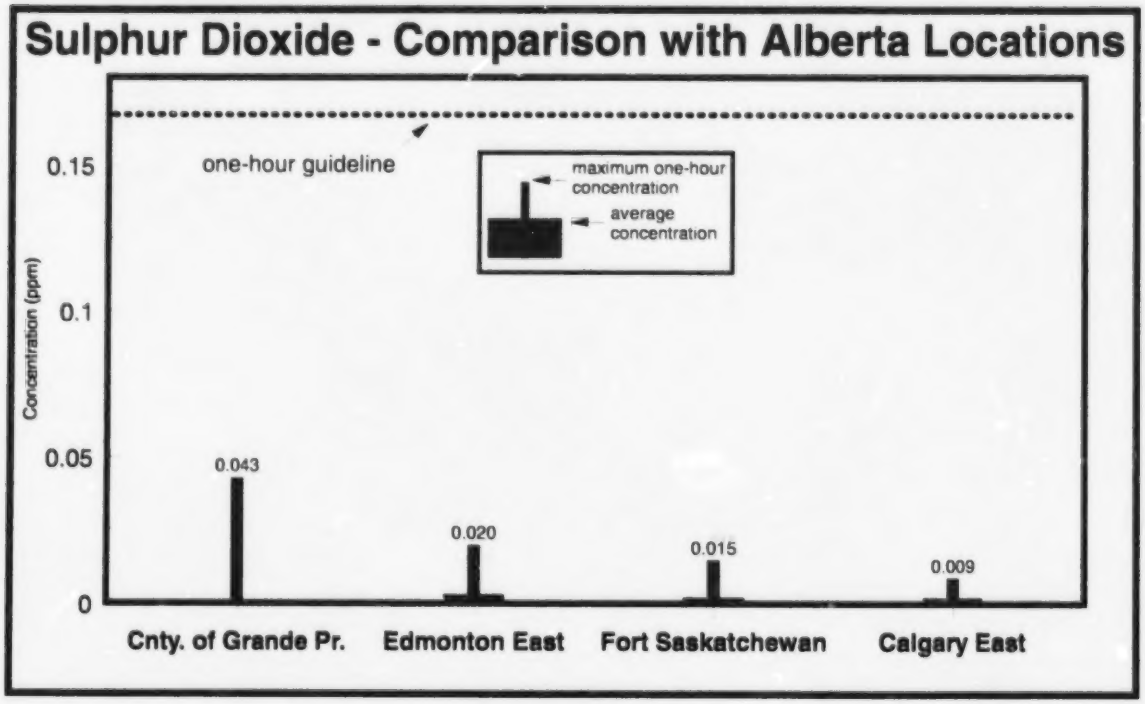
Ambient Air Quality Survey Monitoring Area

Alberta Environment

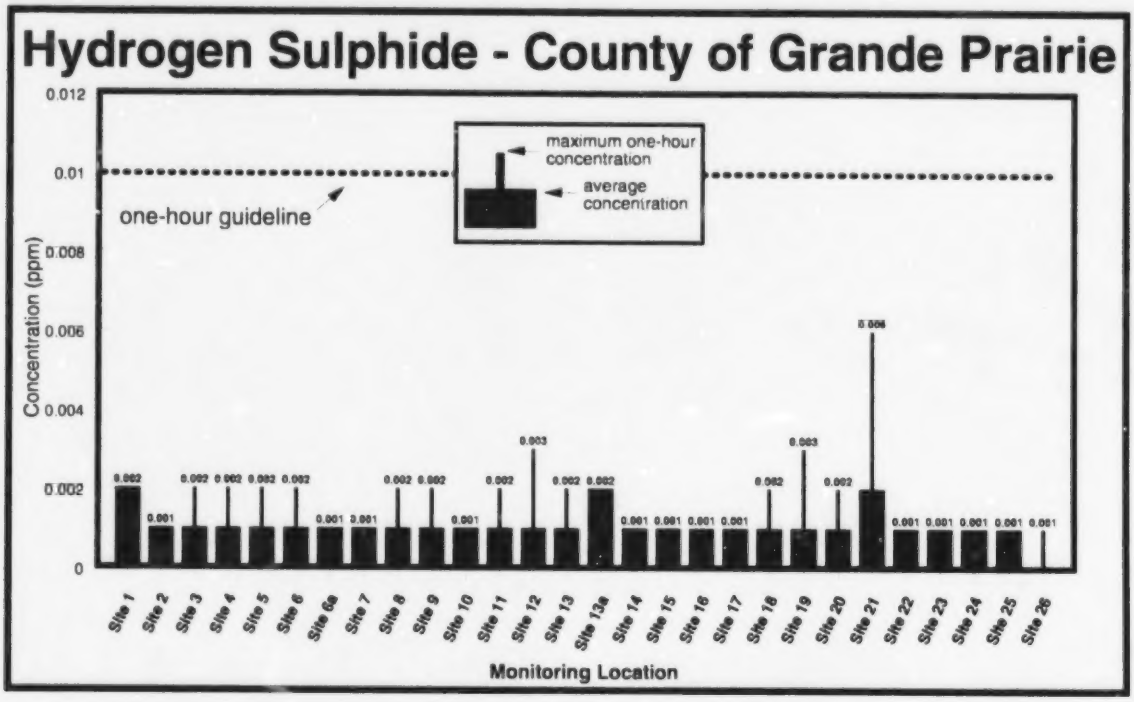
Monitoring Locations	
Site #	**Nearest Facility or Community**
Site 1	Canadian Hunter Elmworth gas plant
Site 2	Beaverlodge Research Station
Site 3	Crestar Goodfare and Encal Sinclair gas plants
Site 4	Locality of Lymburn
Site 5	Brainard Area
Site 6	AEC Hythe Brainard gas plant
Site 7	Alberta/BC Border
Site 8	Martin Lake area
Site 9	UPR Knopcik gas plant
Site 10	Village of Hythe
Site 11	Rigel Knopcik gas plant
Site 12	Rigel Hythe gas battery
Site 13	Crestar Valhalla gas plant (1)
Site 14	AEC West Valhalla battery
Site 15	well sites southeast of Homestead
Site 16	Petro Canada Valhalla gas plant
Site 17	AEC Valhalla battery
Site 18	Crestar Wembley gas plant
Site 19	Peace Pipeline terminal and CCS oil processing facility
Site 20	AEC Saddle Hills gas plant
Site 21	Talisman Teepee Creek gas plant
Site 22	Locality of Teepee Creek
Site 23	Town of Sexsmith
Site 24	Talisman gas plant
Site 25	Huber gas well
Site 26	Crestar Valhalla oil battery

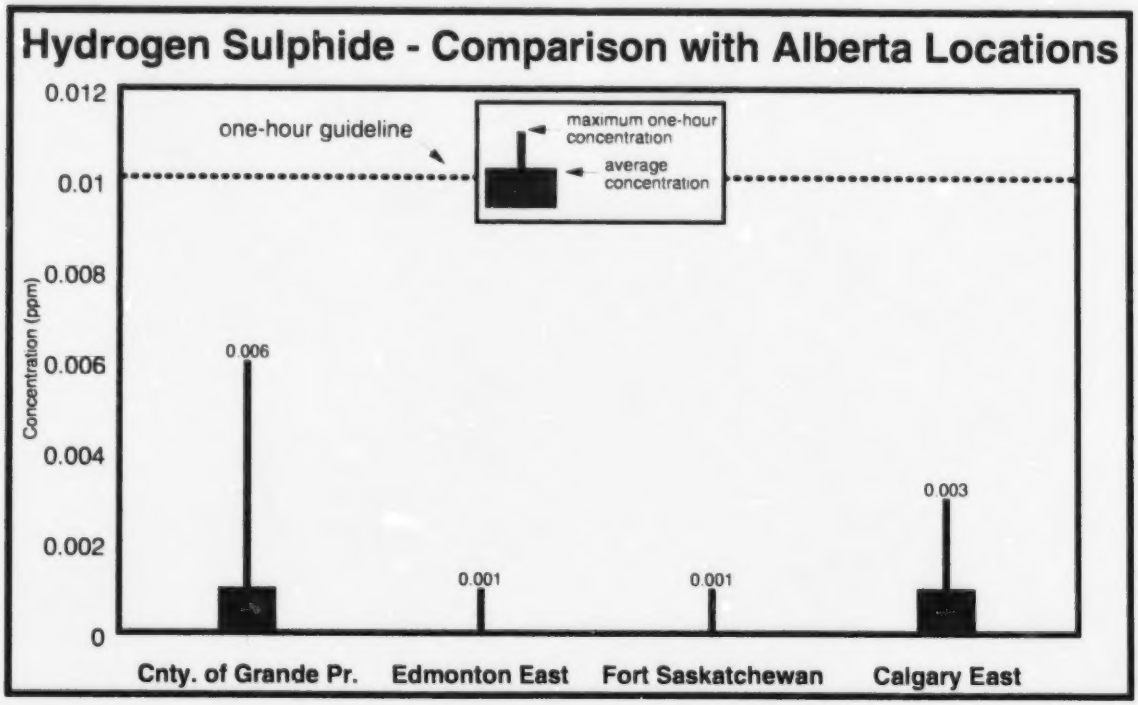
Sulphur Dioxide



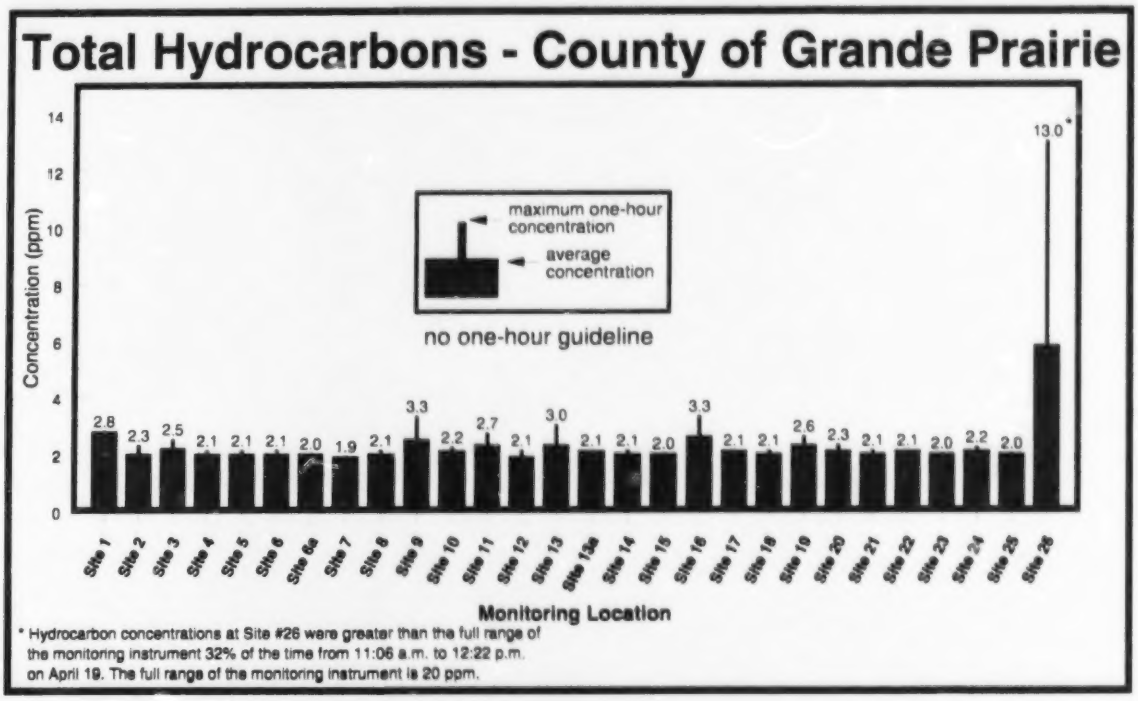


Hydrogen Sulphide

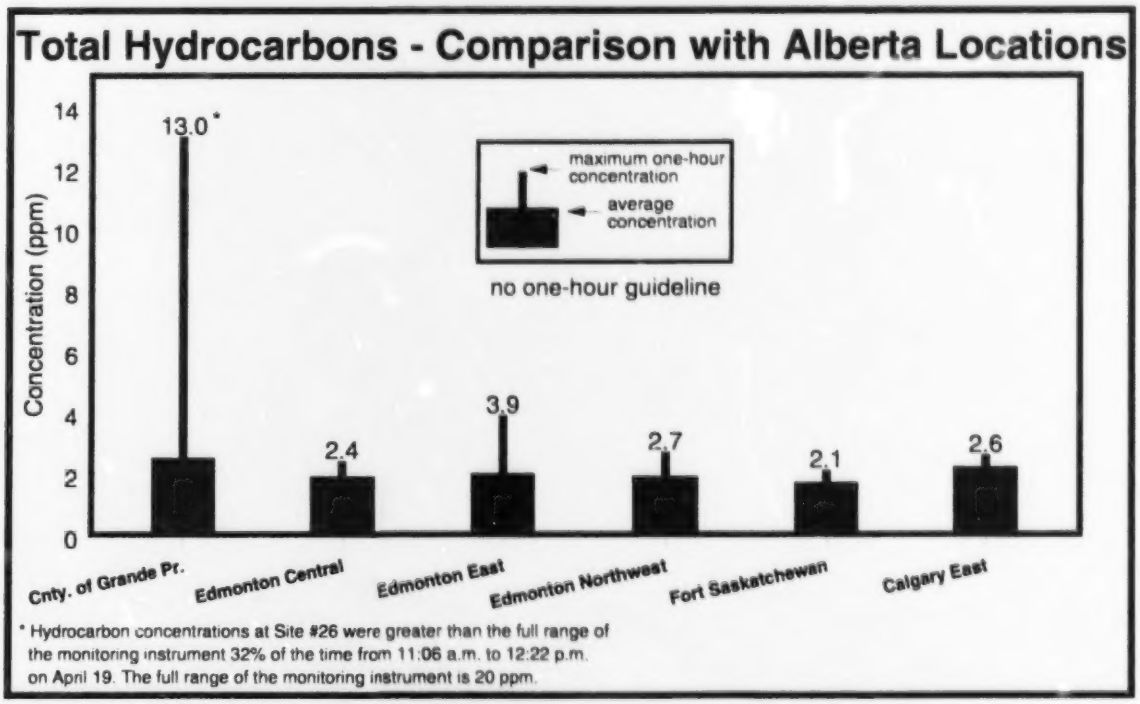




Total Hydrocarbons


Total Hydrocarbons - County of Grande Prairie
Concentration (ppm)
maximum one-hour concentration
average concentration
no one-hour guideline
2.8 2.3 2.5 2.1 2.1 2.1 2.0 1.9 2.1 3.3 2.2 2.7 2.1 3.0 2.1 2.1 2.0 3.3 2.1 2.1 2.6 2.3 2.1 2.1 2.0 2.2 2.0 13.0*
Site 1 Site 2 Site 3 Site 4 Site 5 Site 6 Site 6a Site 7 Site 8 Site 9 Site 10 Site 11 Site 12 Site 13 Site 13a Site 14 Site 15 Site 16 Site 17 Site 18 Site 19 Site 20 Site 21 Site 22 Site 23 Site 24 Site 25 Site 26
Monitoring Location

* Hydrocarbon concentrations at Site #26 were greater than the full range of the monitoring instrument 32% of the time from 11:06 a.m. to 12:22 p.m. on April 19. The full range of the monitoring instrument is 20 ppm.



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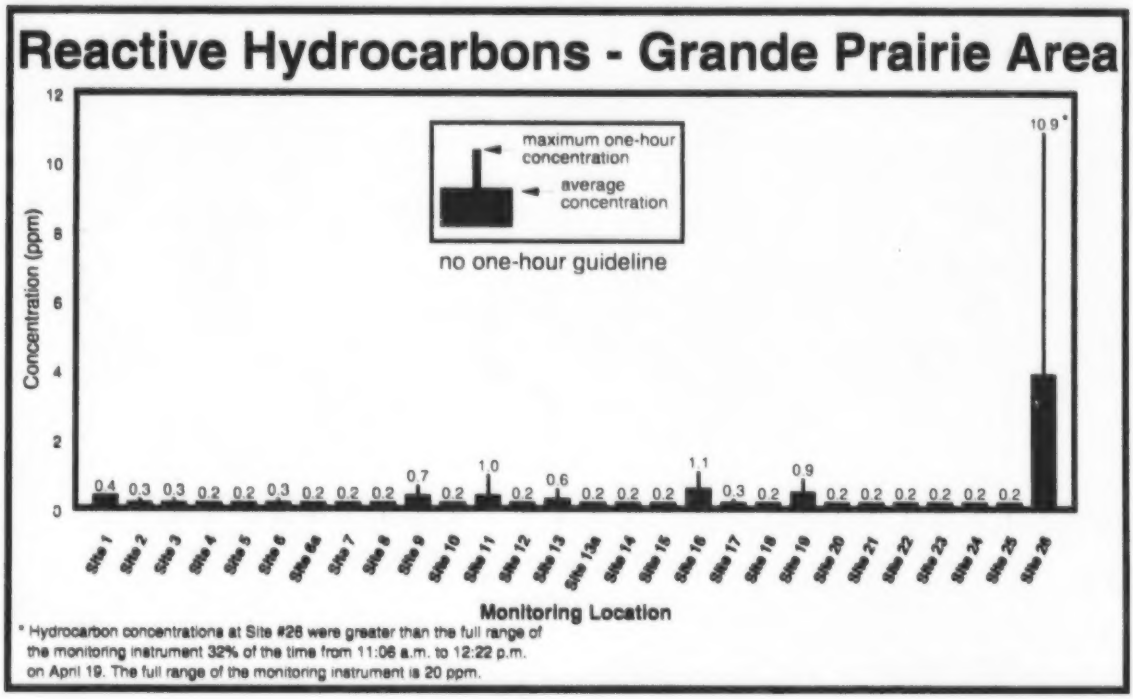
Reactive Hydrocarbons and Methane


Reactive Hydrocarbons - Grande Prairie Area
Concentration (ppm)
maximum one-hour concentration
average concentration
no one-hour guideline
10.9*
0.4 0.3 0.3 0.2 0.2 0.3 0.2 0.2 0.2 0.7 0.2 1.0 0.2 0.6 0.2 0.2 0.2 1.1 0.3 0.2 0.9 0.2 0.2 0.2 0.2 0.2 0.2
Site 1 Site 2 Site 3 Site 4 Site 5 Site 6 Site 6a Site 7 Site 8 Site 9 Site 10 Site 11 Site 12 Site 13 Site 13a Site 14 Site 15 Site 16 Site 17 Site 18 Site 19 Site 20 Site 21 Site 22 Site 23 Site 24 Site 25 Site 26
Monitoring Location

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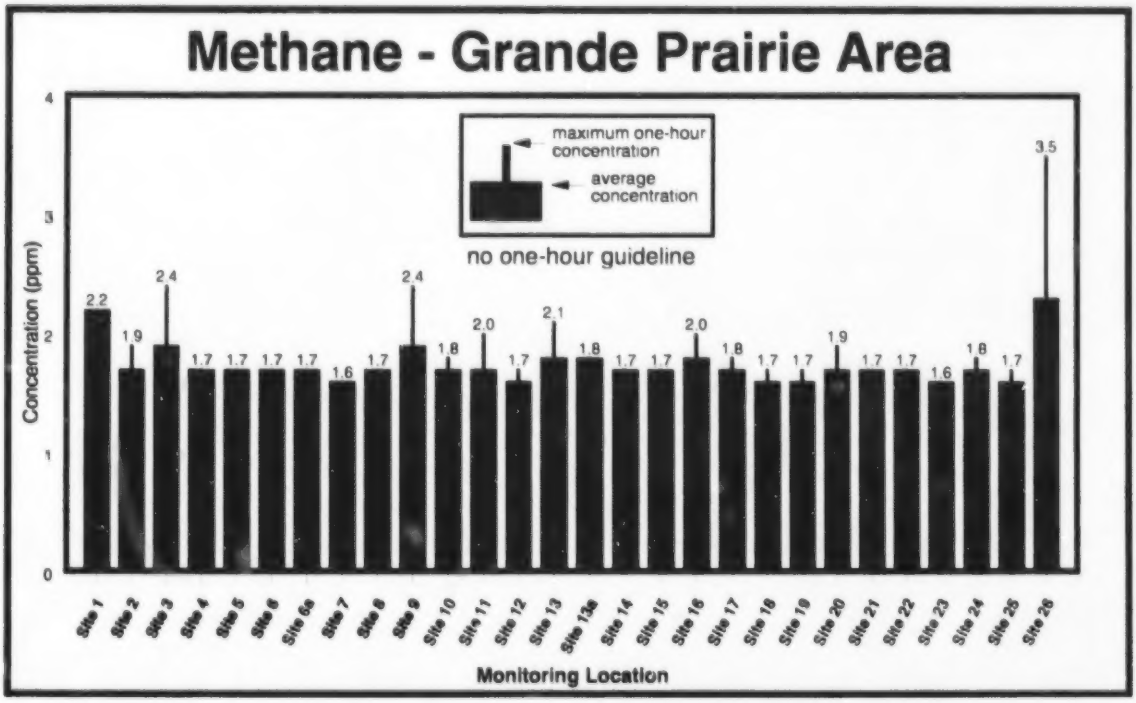
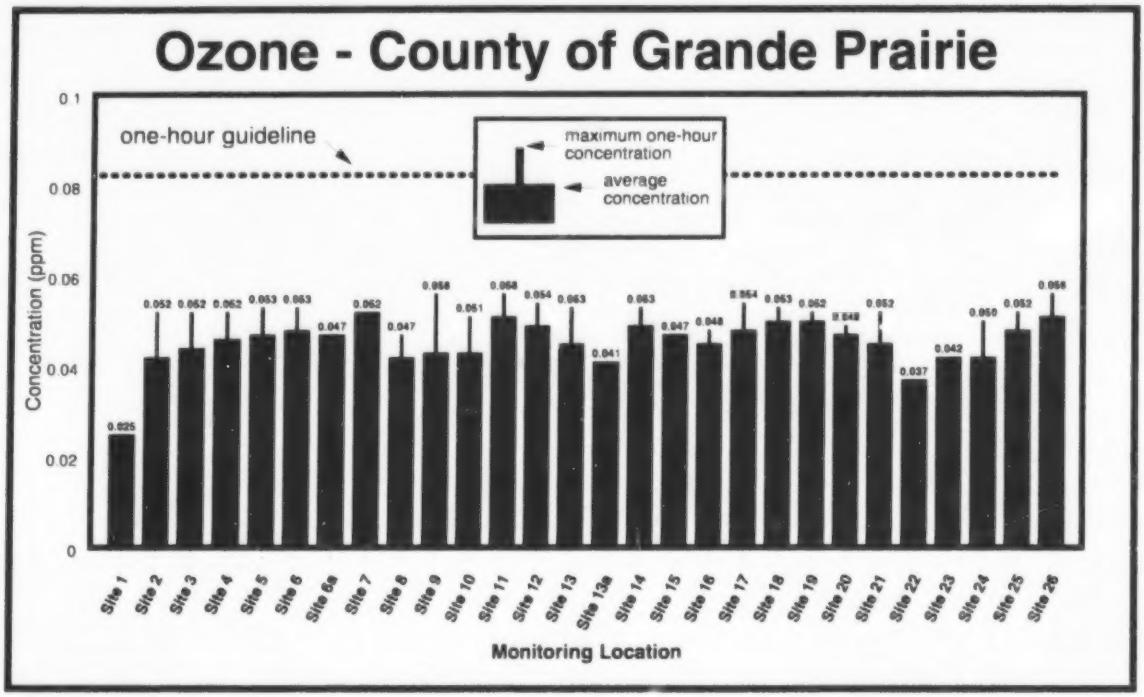

Methane - Grande Prairie Area
Concentration (ppm)
maximum one-hour concentration
average concentration
no one-hour guideline
3.5
2.2 1.9 2.4 1.7 1.7 1.7 1.7 1.6 1.7 2.4 1.8 2.0 1.7 2.1 1.8 1.7 1.7 2.0 1.8 1.7 1.7 1.9 1.7 1.7 1.6 1.8 1.7
Site 1 Site 2 Site 3 Site 4 Site 5 Site 6 Site 6a Site 7 Site 8 Site 9 Site 10 Site 11 Site 12 Site 13 Site 13a Site 14 Site 15 Site 16 Site 17 Site 18 Site 19 Site 20 Site 21 Site 22 Site 23 Site 24 Site 25 Site 26
Monitoring Location

Ozone


Ozone - County of Grande Prairie
one-hour guideline
maximum one-hour concentration
average concentration
Concentration (ppm)
0.1
0.08
0.06
0.04
0.02
0
0.025
0.052
0.052
0.052
0.053
0.053
0.047
0.052
0.047
0.058
0.051
0.058
0.054
0.053
0.041
0.053
0.047
0.048
0.054
0.053
0.052
0.048
0.052
0.037
0.042
0.050
0.052
0.058
Site 1
Site 2
Site 3
Site 4
Site 5
Site 6
Site 6a
Site 7
Site 8
Site 9
Site 10
Site 11
Site 12
Site 13
Site 13a
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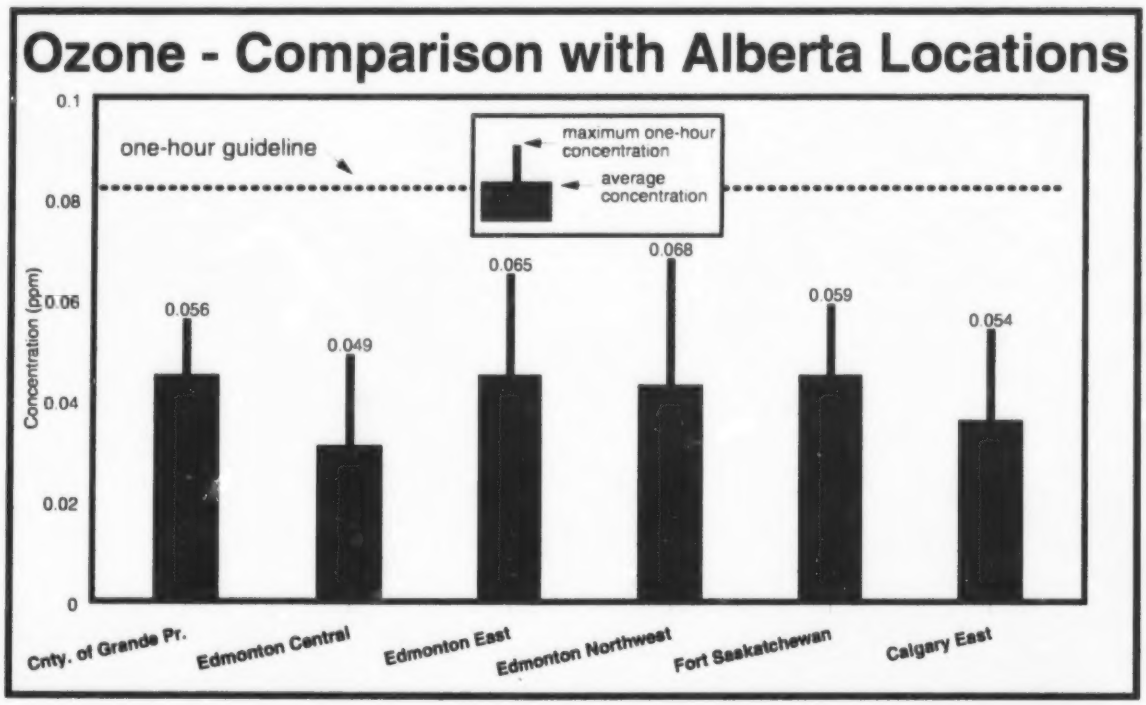
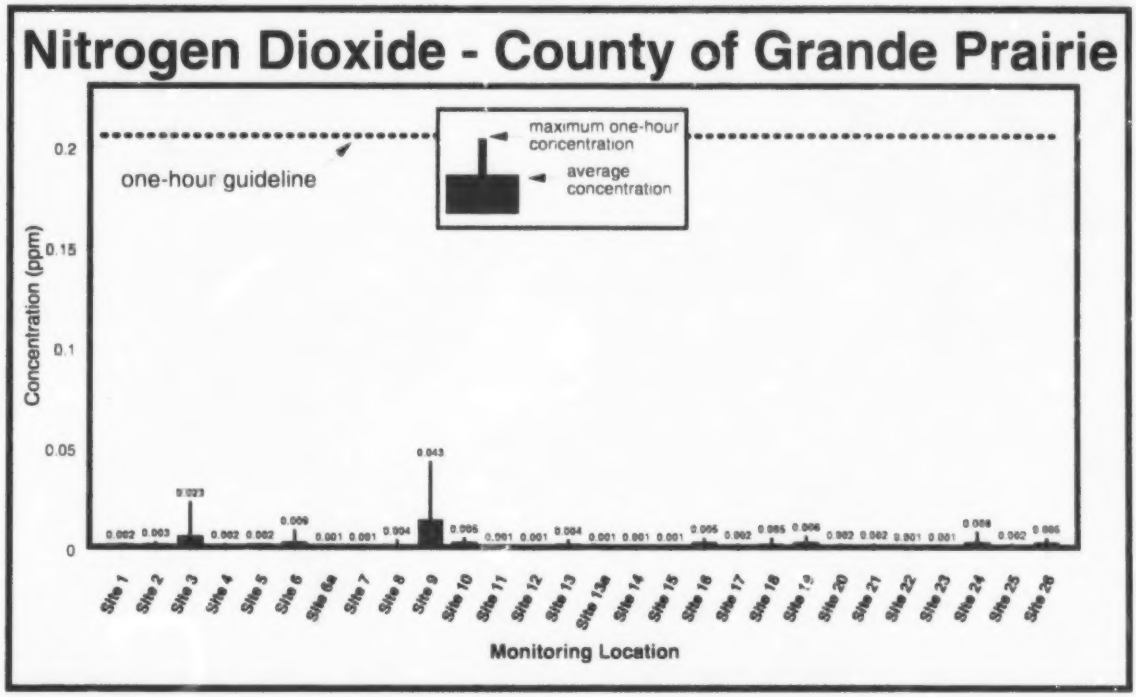
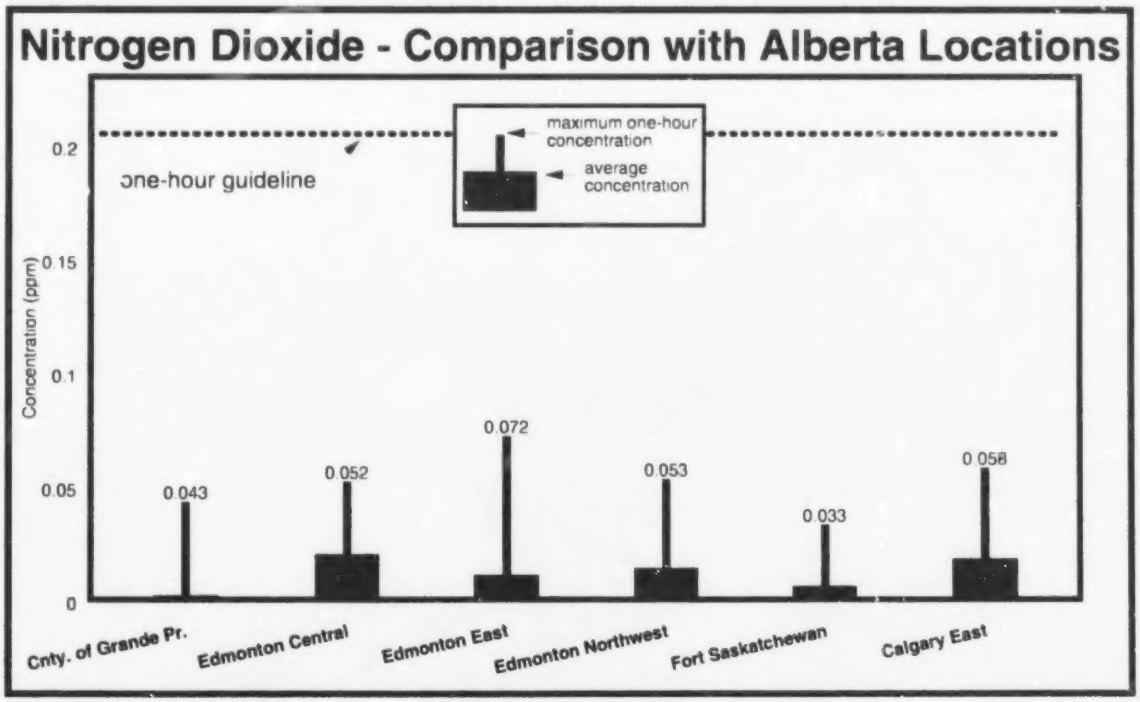
Site 24
Site 25
Site 26
Monitoring Location

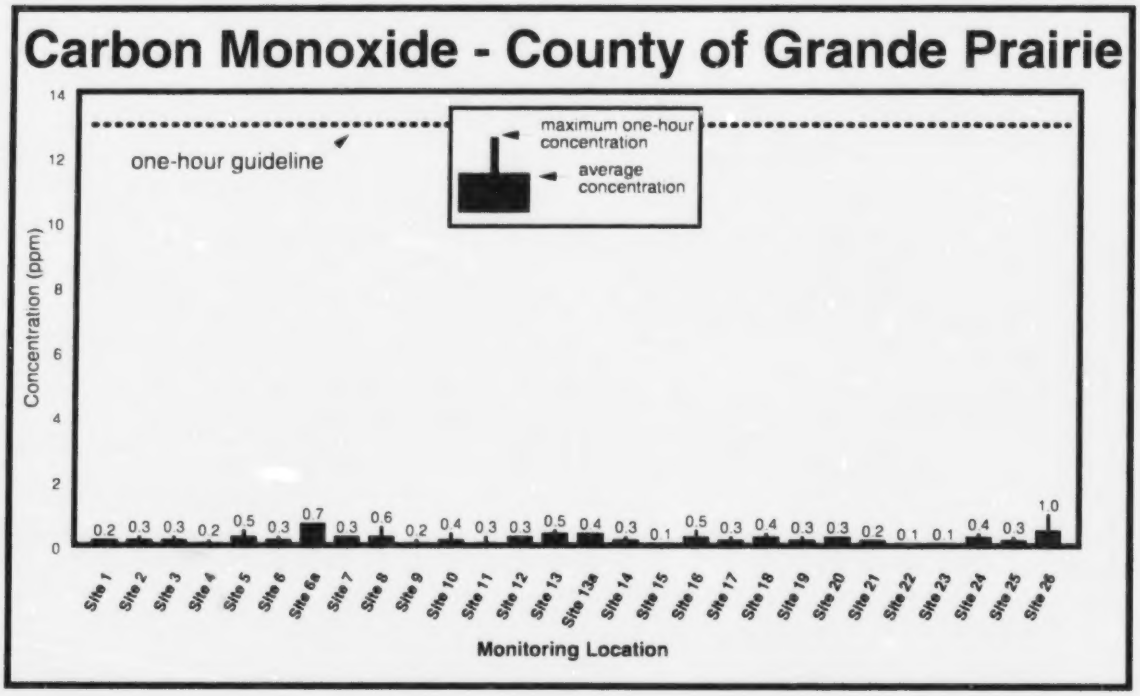

Ozone - Comparison with Alberta Locations
one-hour guideline
maximum one-hour concentration
average concentration
Concentration (ppm)
0.1
0.08
0.06
0.04
0.02
0
0.056
0.049
0.065
0.068
0.059
0.054
Cnty. of Grande Pr.
Edmonton Central
Edmonton East
Edmonton Northwest
Fort Saskatchewan
Calgary East

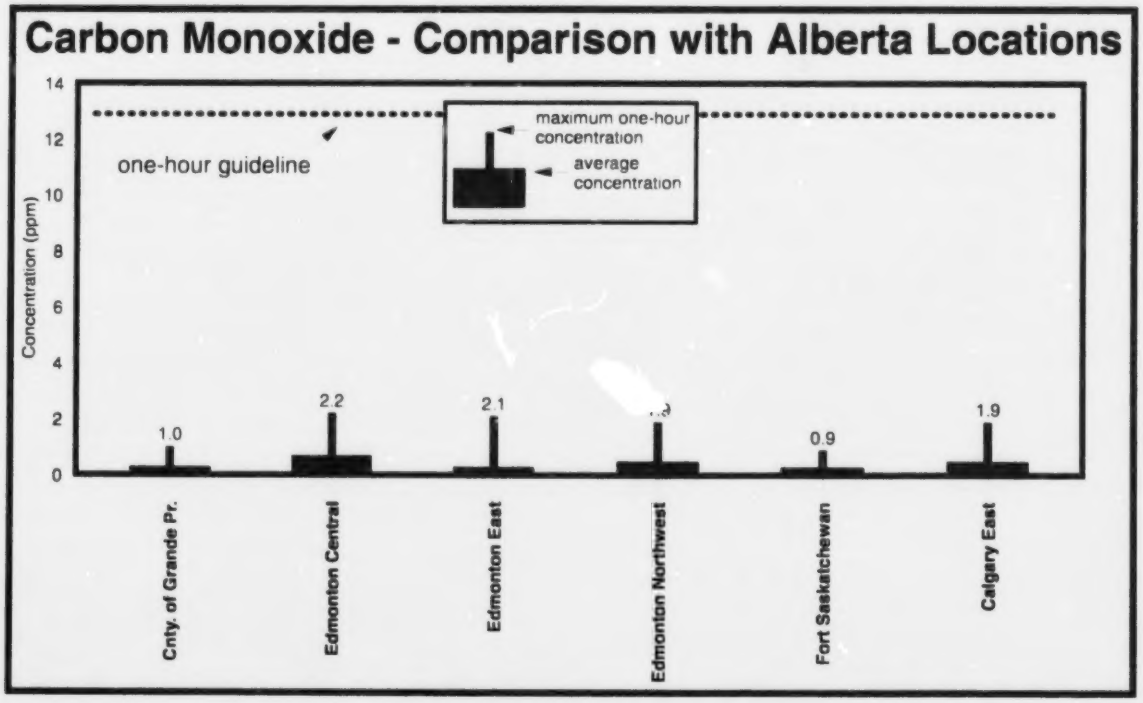
Nitrogen Dioxide


Nitrogen Dioxide - County of Grande Prairie
maximum one-hour concentration
average concentration
one-hour guideline
Concentration (ppm)
0.2
0.15
0.1
0.05
0
0.002 0.003 0.023 0.002 0.002 0.009 0.001 0.001 0.004 0.043 0.005 0.001 0.001 0.004 0.001 0.001 0.001 0.005 0.002 0.005 0.006 0.002 0.002 0.001 0.001 0.008 0.002 0.005
Site 1 Site 2 Site 3 Site 4 Site 5 Site 6 Site 6a Site 7 Site 8 Site 9 Site 10 Site 11 Site 12 Site 13 Site 13a Site 14 Site 15 Site 16 Site 17 Site 18 Site 19 Site 20 Site 21 Site 22 Site 23 Site 24 Site 25 Site 26
Monitoring Location

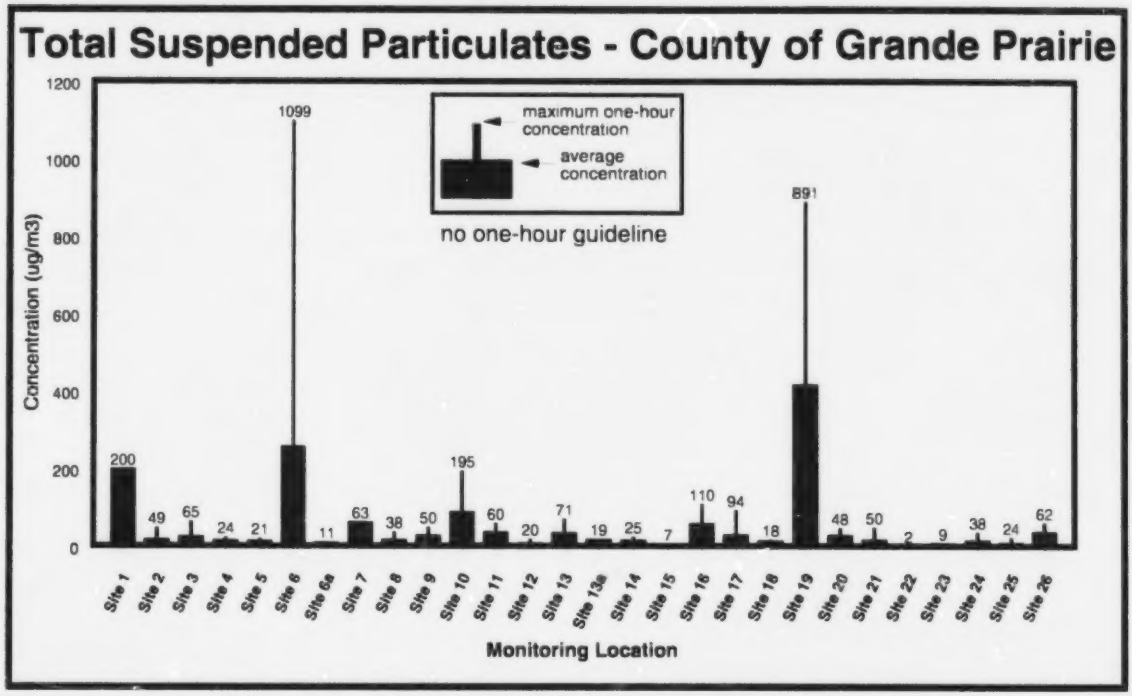


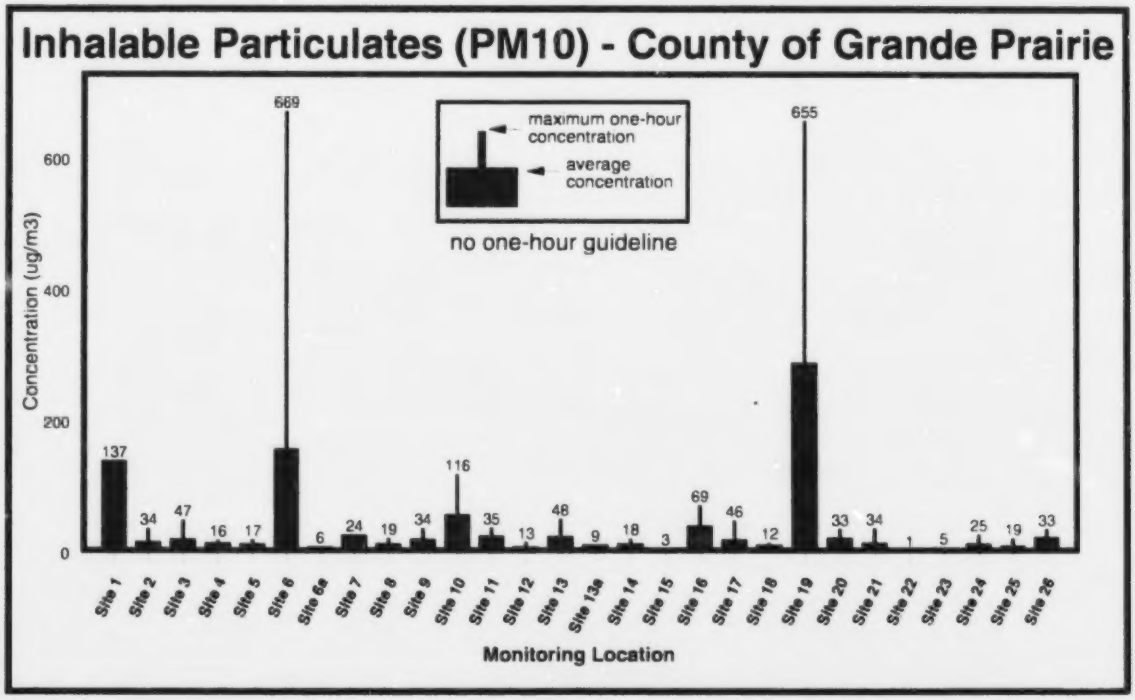
Carbon Monoxide


Carbon Monoxide - County of Grande Prairie
one-hour guideline
maximum one-hour concentration
average concentration
Concentration (ppm)
0 2 4 6 8 10 12 14
0.2 0.3 0.3 0.2 0.5 0.3 0.7 0.3 0.6 0.2 0.4 0.3 0.3 0.5 0.4 0.3 0.1 0.5 0.3 0.4 0.3 0.3 0.2 0.1 0.1 0.4 0.3 1.0
Site 1 Site 2 Site 3 Site 4 Site 5 Site 6 Site 6a Site 7 Site 8 Site 9 Site 10 Site 11 Site 12 Site 13 Site 13a Site 14 Site 15 Site 16 Site 17 Site 18 Site 19 Site 20 Site 21 Site 22 Site 23 Site 24 Site 25 Site 26
Monitoring Location

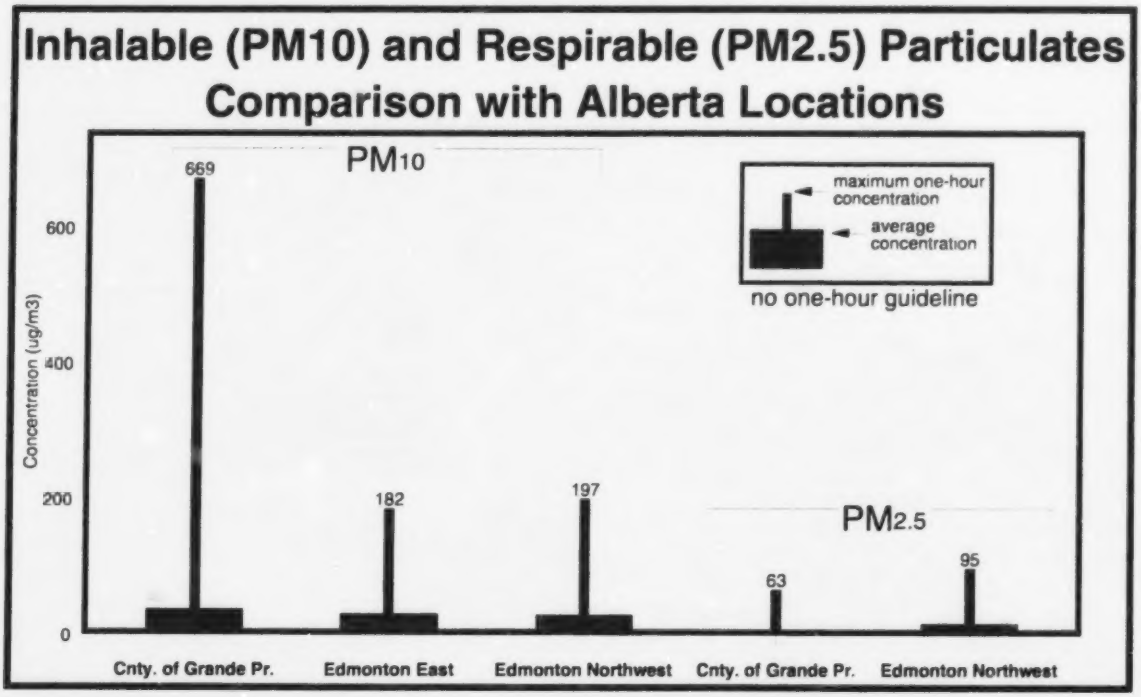

Carbon Monoxide - Comparison with Alberta Locations
one-hour guideline
maximum one-hour concentration
average concentration
Concentration (ppm)
0 2 4 6 8 10 12 14
1.0 2.2 2.1 0.9 1.9
Cnty. of Grande Pr. Edmonton Central Edmonton East Edmonton Northwest Fort Saskatchewan Calgary East

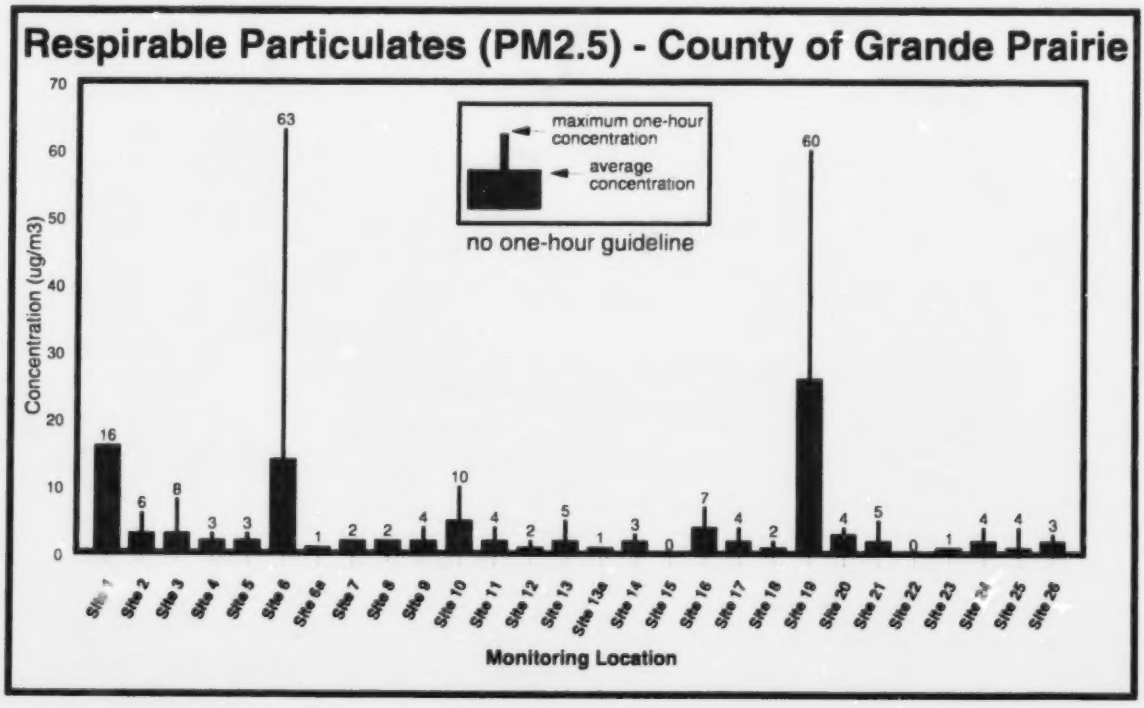
Particulates



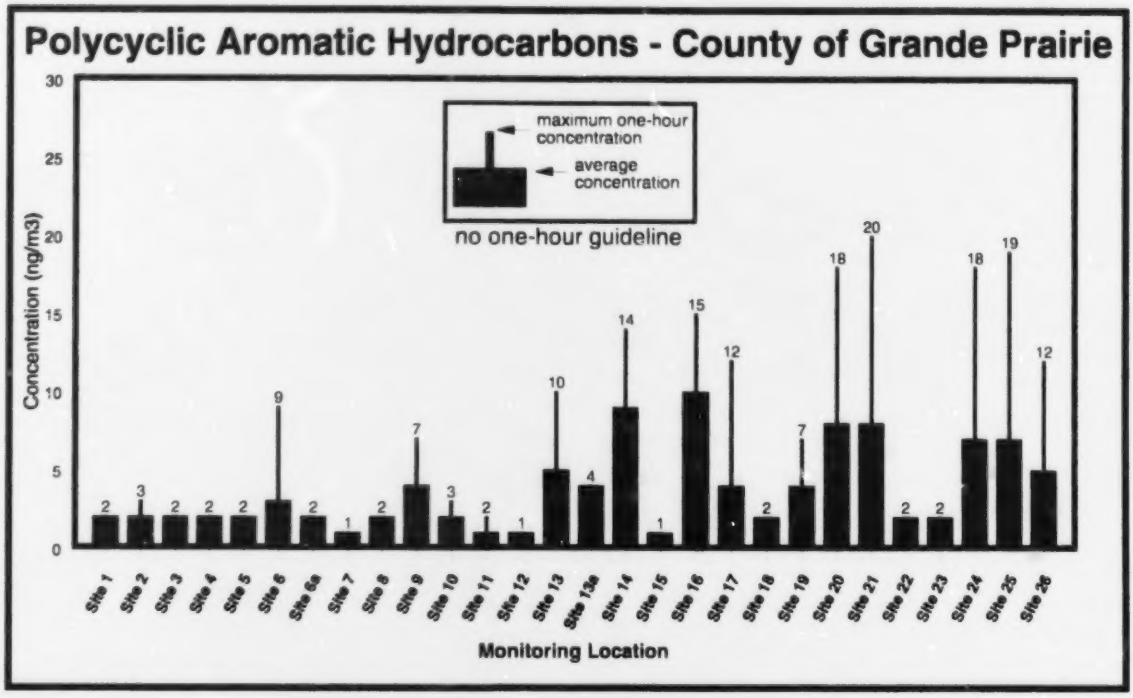


Particulates



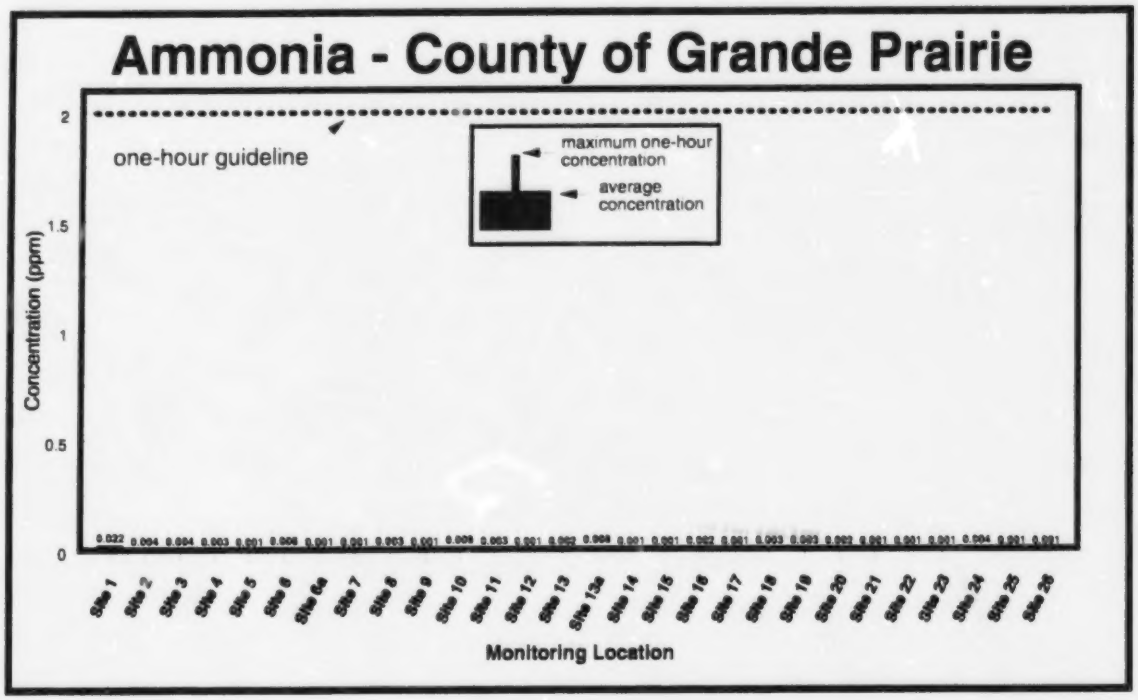


Polycyclic Aromatic Hydrocarbons



Hourly polycyclic aromatic hydrocarbon data are not available at other locations in Alberta

Ammonia


Ammonia - County of Grande Prairie
one-hour guideline
maximum one-hour concentration
average concentration
Concentration (ppm)
2
1.5
1
0.5
0
Monitoring Location

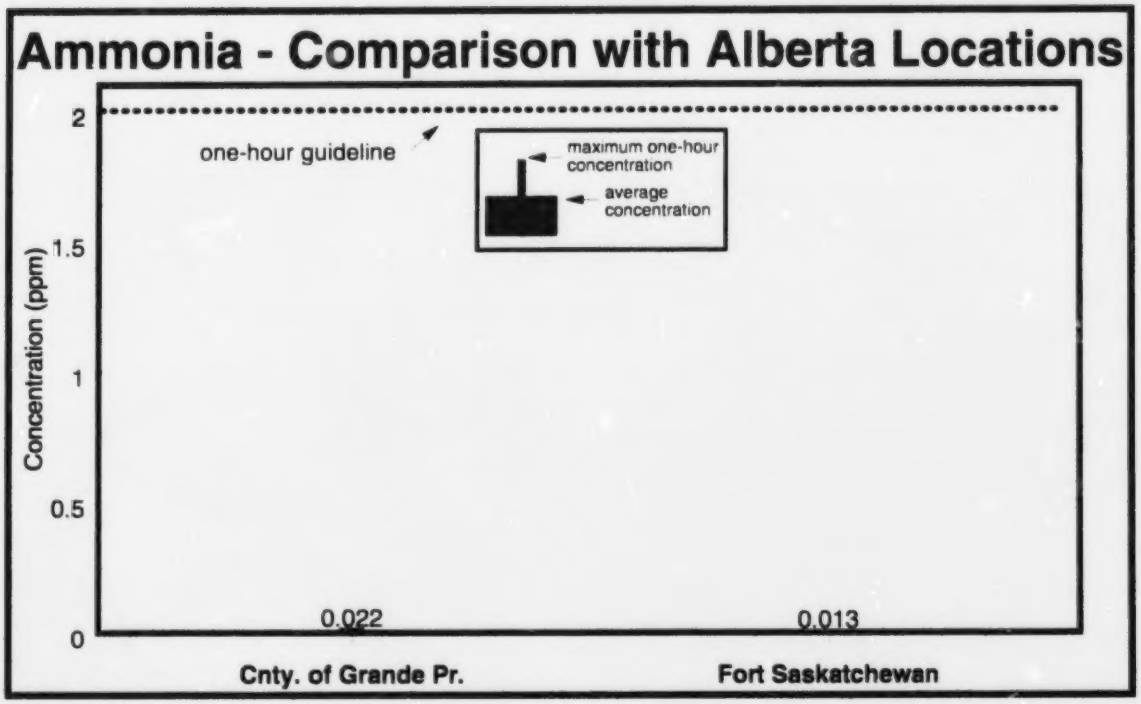

Ammonia - Comparison with Alberta Locations
one-hour guideline
maximum one-hour concentration
average concentration
Concentration (ppm)
2
1.5
1
0.5
0
0.022
0.013
Cnty. of Grande Pr.
Fort Saskatchewan

Table 1 shows **average** air quality parameter concentrations at individual monitoring locations in the County of Grande Prairie for the monitoring period (April 8 to 21, 1999).

Table 1: Overall Average Air Quality Parameter Concentrations at each Site in the County of Grande Prairie

Monitoring Location	CO (ppm)	O_3 (ppm)	THC (ppm)	CH_4 (ppm)	RHC (ppm)	SO_2 (ppm)	NO (ppm)	NO_2 (ppm)	NO_x (ppm)	NH_3 (ppm)	TRS (ppm)	H_2S (ppm)	TSP (ug/m^3)	PM_{10} (ug/m^3)	$PM_{2.5}$ (ug/m^3)	PAH (ng/m^3)
Site # 1	0.2	0.025	2.8	2.2	0.4	0.000	0.000	0.002	0.002	0.022	0.002	0.002	200	137	16	2
Site # 2	0.2	0.042	2.0	1.7	0.2	0.000	0.001	0.002	0.002	0.002	0.001	0.001	19	14	3	2
Site # 3	0.2	0.044	2.2	1.9	0.2	0.001	0.024	0.006	0.025	0.003	0.001	0.001	26	18	3	2
Site # 4	0.1	0.046	2.0	1.7	0.2	0.000	0.001	0.001	0.002	0.002	0.001	0.001	17	12	2	2
Site # 5	0.3	0.047	2.0	1.7	0.2	0.000	0.002	0.002	0.003	0.001	0.001	0.001	15	11	2	2
Site # 6	0.2	0.048	2.0	1.7	0.2	0.002	0.002	0.003	0.004	0.002	0.001	0.001	258	155	14	3
Site # 6a	0.7	0.047	2.0	1.7	0.2	0.000	0.004	0.001	0.005	0.001	0.001	0.001	11	6	1	2
Site # 7	0.3	0.052	1.9	1.6	0.2	0.000	0.001	0.001	0.002	0.001	0.001	0.001	63	24	2	1
Site # 8	0.3	0.042	2.0	1.7	0.2	0.001	0.002	0.001	0.004	0.001	0.001	0.001	18	11	2	2
Site # 9	0.1	0.043	2.5	1.9	0.4	0.001	0.015	0.014	0.029	0.001	0.001	0.001	29	18	2	4
Site #10	0.2	0.043	2.1	1.7	0.2	0.001	0.002	0.003	0.004	0.003	0.001	0.001	89	55	5	2
Site #11	0.1	0.051	2.3	1.7	0.4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	38	23	2	1
Site #12	0.3	0.049	1.9	1.6	0.2	0.000	0.001	0.001	0.002	0.001	0.001	0.001	9	6	1	1
Site #13	0.4	0.045	2.3	1.8	0.3	0.000	0.003	0.002	0.005	0.001	0.001	0.001	38	22	2	5
Site #13a	0.4	0.041	2.1	1.8	0.2	0.001	0.004	0.001	0.005	0.008	0.002	0.002	19	9	1	4
Site #14	0.2	0.049	2.0	1.7	0.2	0.004	0.001	0.001	0.001	0.001	0.001	0.001	17	11	2	9
Site #15	0.1	0.047	2.0	1.7	0.2	0.000	0.002	0.001	0.003	0.001	0.001	0.001	7	3	0	1
Site #16	0.3	0.045	2.6	1.8	0.6	0.000	0.002	0.003	0.005	0.001	0.001	0.001	59	38	4	10
Site #17	0.2	0.048	2.1	1.7	0.2	0.000	0.002	0.001	0.002	0.001	0.001	0.001	31	17	2	4
Site #18	0.3	0.050	2.0	1.6	0.2	0.001	0.002	0.002	0.005	0.001	0.001	0.001	15	9	1	2
Site #19	0.2	0.050	2.3	1.6	0.5	0.000	0.004	0.003	0.006	0.002	0.001	0.001	418	286	26	4
Site #20	0.3	0.047	2.1	1.7	0.2	0.016	0.001	0.001	0.003	0.001	0.001	0.001	30	20	3	8
Site #21	0.2	0.045	2.0	1.7	0.2	0.004	0.002	0.001	0.004	0.001	0.002	0.002	18	12	2	8
Site #22	0.1	0.037	2.1	1.7	0.2	0.001	0.002	0.001	0.003	0.001	0.002	0.001	2	1	0	2
Site #23	0.1	0.042	2.0	1.6	0.2	0.001	0.002	0.001	0.003	0.001	0.001	0.001	9	5	1	2
Site #24	0.3	0.042	2.1	1.7	0.2	0.001	0.003	0.003	0.007	0.002	0.001	0.001	17	11	2	7
Site #25	0.2	0.048	2.0	1.6	0.2	0.001	0.001	0.001	0.002	0.001	0.001	0.001	11	8	1	7
Site #26	0.5	0.051	>5.8	2.3	>3.9	0.002	0.002	0.003	0.005	0.001	0.001	0.000	39	21	2	5
Overall Average	0.3	0.045	>2.3	1.7	>0.4	0.001	0.003	0.002	0.005	0.002	0.001	0.001	54	34	4	4

> indicates the pollutant exceeded the range of the instrument

Table 2 shows **maximum one-hour** air quality parameter concentrations at individual monitoring locations in the County of Grande Prairie for the monitoring period (April 8 to 21, 1999).

Table 2: Maximum One-hour Air Quality Parameter Concentrations at each Site in the County of Grande Prairie

Monitoring Location	CO (ppm)	O_3 (ppm)	THC (ppm)	CH_4 (ppm)	RHC (ppm)	SO_2 (ppm)	NO (ppm)	NO_2 (ppm)	NO_x (ppm)	NH_3 (ppm)	TRS (ppm)	H_2S (ppm)	TSP (ug/m^3)	PM_{10} (ug/m^3)	$PM_{2.5}$ (ug/m^3)	PAH (ng/m^3)
Site # 1	0.2	0.025	2.8	2.2	0.4	0.000	0.000	0.002	0.002	0.022	0.002	0.002	200	137	16	2
Site # 2	0.3	0.052	2.3	1.9	0.3	0.000	0.002	0.003	0.005	0.004	0.001	0.001	49	34	6	3
Site # 3	0.3	0.052	2.5	2.4	0.3	0.001	0.087	0.023	0.091	0.004	0.002	0.002	65	47	8	2
Site # 4	0.2	0.052	2.1	1.7	0.2	0.001	0.003	0.002	0.003	0.003	0.001	0.002	24	16	3	2
Site # 5	0.5	0.053	2.1	1.7	0.2	0.001	0.005	0.002	0.006	0.001	0.001	0.002	21	17	3	2
Site # 6	0.3	0.053	2.1	1.7	0.3	0.004	0.005	0.009	0.009	0.006	0.002	0.002	1099	669	63	9
Site # 6a	0.7	0.047	2.0	1.7	0.2	0.000	0.004	0.001	0.005	0.001	0.001	0.001	11	6	1	2
Site # 7	0.3	0.052	1.9	1.6	0.2	0.000	0.001	0.001	0.002	0.001	0.001	0.001	63	24	2	1
Site # 8	0.6	0.047	2.1	1.7	0.2	0.002	0.006	0.004	0.010	0.003	0.002	0.002	38	19	2	2
Site # 9	0.2	0.056	3.3	2.4	0.7	0.001	0.049	0.043	0.092	0.001	0.002	0.002	50	34	4	7
Site #10	0.4	0.051	2.2	1.8	0.2	0.001	0.004	0.005	0.009	0.008	0.001	0.001	195	116	10	3
Site #11	0.3	0.056	2.7	2.0	1.0	0.001	0.002	0.001	0.003	0.003	0.002	0.002	60	35	4	2
Site #12	0.3	0.054	2.1	1.7	0.2	0.001	0.002	0.001	0.003	0.001	0.002	0.003	20	13	2	1
Site #13	0.5	0.053	3.0	2.1	0.6	0.001	0.006	0.004	0.009	0.002	0.002	0.002	71	48	5	10
Site #13a	0.4	0.041	2.1	1.8	0.2	0.001	0.004	0.001	0.005	0.008	0.002	0.002	19	9	1	4
Site #14	0.3	0.053	2.1	1.7	0.2	0.011	0.002	0.001	0.003	0.001	0.001	0.001	25	18	3	14
Site #15	0.1	0.047	2.0	1.7	0.2	0.000	0.002	0.001	0.003	0.001	0.001	0.001	7	3	0	1
Site #16	0.5	0.048	3.3	2.0	1.1	0.001	0.004	0.005	0.006	0.002	0.001	0.001	110	69	7	15
Site #17	0.3	0.054	2.1	1.8	0.3	0.000	0.002	0.002	0.003	0.001	0.002	0.001	94	46	4	12
Site #18	0.4	0.053	2.1	1.7	0.2	0.001	0.005	0.005	0.008	0.003	0.001	0.002	18	12	2	2
Site #19	0.3	0.052	2.6	1.7	0.9	0.001	0.006	0.006	0.012	0.003	0.003	0.003	891	655	60	7
Site #20	0.3	0.049	2.3	1.9	0.2	0.043	0.002	0.002	0.004	0.002	0.002	0.002	48	33	4	18
Site #21	0.2	0.052	2.1	1.7	0.2	0.011	0.004	0.002	0.005	0.001	0.005	0.006	50	34	5	20
Site #22	0.1	0.037	2.1	1.7	0.2	0.001	0.002	0.001	0.003	0.001	0.002	0.001	2	1	0	2
Site #23	0.1	0.042	2.0	1.6	0.2	0.001	0.002	0.001	0.003	0.001	0.001	0.001	9	5	1	2
Site #24	0.4	0.050	2.2	1.8	0.2	0.001	0.005	0.008	0.010	0.004	0.002	0.001	38	25	4	18
Site #25	0.3	0.052	2.0	1.7	0.2	0.002	0.002	0.002	0.003	0.001	0.001	0.001	24	19	4	19
Site #26	1.0	0.056	>13.0	3.5	>10.9	0.006	0.003	0.005	0.009	0.001	0.001	0.001	62	33	3	12
One-hour Maximum	1.0	0.056	>13.0	3.5	>10.9	0.043	0.087	0.043	0.092	0.022	0.005	0.006	1099	669	63	20
One-Hour Guideline	13.0	0.082	n/a	n/a	n/a	0.170	n/a	0.210	n/a	2.000	n/a	0.010	n/a	n/a	n/a	n/a

> indicates the pollutant exceeded the range of the instrument

Table 3 shows **peak five-minute** air quality parameter concentrations at individual monitoring locations in the County of Grande Prairie for the monitoring period (April 8 to 21, 1999).

Table 3: Peak Five-minute Air Quality Parameter Concentrations at each Site in the County of Grande Prairie

Monitoring Location	CO (ppm)	O_3 (ppm)	THC (ppm)	CH_4 (ppm)	RHC (ppm)	SO_2 (ppm)	NO (ppm)	NO_2 (ppm)	NO_X (ppm)	NH_3 (ppm)	TRS (ppm)	H_2S (ppm)	TSP (ug/m^3)	PM_{10} (ug/m^3)	$PM_{2.5}$ (ug/m^3)	PAH (ng/m^3)
Site # 1	0.5	0.029	3.3	2.7	1.0	0.000	0.002	0.005	0.006	0.055	0.002	0.003	497	345	42	3
Site # 2	0.4	0.054	2.9	2.2	0.4	0.000	0.007	0.007	0.014	0.015	0.001	0.002	191	135	29	11
Site # 3	0.6	0.054	4.6	4.8	1.2	0.003	0.568	0.164	0.389	0.029	0.002	0.004	162	124	28	5
Site # 4	0.3	0.056	2.1	1.8	0.2	0.001	0.004	0.003	0.004	0.004	0.002	0.002	130	84	9	2
Site # 5	0.6	0.055	2.2	1.7	0.3	0.002	0.006	0.006	0.010	0.004	0.001	0.003	91	55	5	2
Site # 6	0.4	0.054	2.5	1.8	0.6	0.024	0.017	0.085	0.084	0.037	0.002	0.003	2519	1455	121	23
Site # 6a	1.1	0.047	2.0	1.7	0.2	0.000	0.005	0.002	0.007	0.003	0.002	0.002	17	10	1	3
Site # 7	0.5	0.053	2.0	1.6	0.2	0.000	0.002	0.002	0.004	0.002	0.001	0.002	520	184	8	2
Site # 8	0.8	0.049	2.2	1.8	0.3	0.003	0.011	0.014	0.025	0.004	0.002	0.002	336	157	9	2
Site # 9	0.4	0.058	5.4	3.3	3.5	0.002	0.132	0.171	0.242	0.003	0.002	0.003	147	102	11	15
Site #10	0.5	0.058	2.4	1.9	0.3	0.002	0.005	0.014	0.016	0.028	0.003	0.003	1063	626	54	5
Site #11	0.6	0.058	4.5	3.1	2.9	0.002	0.005	0.003	0.005	0.017	0.002	0.002	449	292	24	3
Site #12	0.6	0.055	2.5	1.9	0.3	0.002	0.003	0.004	0.004	0.002	0.003	0.004	121	70	5	2
Site #13	1.7	0.056	3.9	2.6	1.0	0.001	0.016	0.009	0.020	0.004	0.002	0.002	475	284	21	18
Site #13a	0.6	0.043	2.3	2.0	0.4	0.001	0.005	0.002	0.007	0.020	0.002	0.002	74	37	3	7
Site #14	0.4	0.053	2.2	1.7	0.4	0.017	0.004	0.002	0.006	0.003	0.002	0.002	109	58	5	2
Site #15	0.1	0.048	2.0	1.7	0.2	0.000	0.003	0.001	0.003	0.002	0.002	0.002	23	11	1	2
Site #16	0.8	0.050	5.8	2.8	3.2	0.001	0.009	0.013	0.015	0.005	0.002	0.002	434	278	26	6
Site #17	0.4	0.055	2.7	2.3	0.7	0.001	0.008	0.010	0.011	0.004	0.002	0.002	61	17	3	4
Site #18	0.5	0.054	2.2	1.8	0.4	0.003	0.012	0.015	0.025	0.013	0.002	0.003	127	61	5	5
Site #19	0.6	0.053	5.0	1.8	3.3	0.003	0.028	0.019	0.045	0.022	0.012	0.011	5478	3862	369	23
Site #20	0.6	0.050	2.6	2.0	0.5	0.069	0.005	0.006	0.008	0.009	0.002	0.002	203	145	17	6
Site #21	0.3	0.053	2.1	1.7	0.2	0.039	0.005	0.005	0.006	0.002	0.015	0.019	305	189	19	4
Site #22	0.1	0.038	2.2	1.7	0.2	0.001	0.003	0.002	0.005	0.002	0.002	0.001	8	4	0	2
Site #23	0.2	0.043	2.0	1.7	0.2	0.001	0.006	0.005	0.007	0.002	0.002	0.002	28	15	2	4
Site #24	0.7	0.052	2.4	1.9	0.4	0.002	0.007	0.019	0.025	0.007	0.002	0.002	195	116	9	5
Site #25	0.4	0.052	2.1	1.7	0.2	0.007	0.003	0.004	0.004	0.002	0.001	0.002	75	64	12	2
Site #26	1.9	0.056	>20	4.8	>20	0.012	0.008	0.013	0.017	0.003	0.001	0.001	389	182	11	142
Five-minute Peak	1.9	0.058	>20	4.8	>20	0.069	0.568	0.171	0.389	0.055	0.015	0.019	5478	3862	369	142

> indicates the pollutant exceeded the range of the instrument

Table 4 shows **overall average** air quality parameter concentrations at all monitoring locations in the County of Grande Prairie for the entire monitoring period (April 8 to 21, 1999) compared with other locations in Alberta.

Table 4: Overall Average Air Quality Parameter Concentrations at Other Locations in Alberta

Monitoring Location	CO (ppm)	O_3 (ppm)	THC (ppm)	CH_4 (ppm)	RHC (ppm)	SO_2 (ppm)	NO (ppm)	NO_2 (ppm)	NO_X (ppm)	NH_3 (ppm)	TRS (ppm)	H_2S (ppm)	TSP (ug/m^3)	PM_{10} (ug/m^3)	$PM_{2.5}$ (ug/m^3)	PAH (ng/m^3)
County of Grande Prairie	0.2	0.046	>2.3	1.7	>0.4	0.002	0.004	0.003	0.006	0.002	0.001	0.001	57	36	4	4
Edmonton Central	0.7	0.031	1.9	no data			0.010	0.020	0.028				no data			
Edmonton East	0.3	0.045	2.0	no data		0.003	0.007	0.011	0.017	no data		0.000	no data	27	no data	
Edmonton Northwest	0.5	0.043	1.9	no data			0.010	0.014	0.023	no data				26	13	no data
Calgary East	0.5	0.036	2.2	no data		0.002	0.015	0.018	0.033	no data		0.001	no data	no data		
Fort Saskatchewan	0.3	0.045	1.7	no data		0.002	0.003	0.006	0.009	0.005	no data	0.000	no data			

> indicates the pollutant exceeded the range of the instrument

Table 5 shows **maximum one-hour** air quality parameter concentrations at all monitoring locations in the County of Grande Prairie for the entire monitoring period (April 8 to 21, 1999) compared with other locations in Alberta.

Table 5: Maximum One-hour Average Air Quality Parameter Concentrations at Other Locations in Alberta

Monitoring Location	CO (ppm)	O_3 (ppm)	THC (ppm)	CH_4 (ppm)	RHC (ppm)	SO_2 (ppm)	NO (ppm)	NO_2 (ppm)	NO_X (ppm)	NH_3 (ppm)	TRS (ppm)	H_2S (ppm)	TSP (ug/m^3)	PM_{10} (ug/m^3)	$PM_{2.5}$ (ug/m^3)	PAH (ng/m^3)
County of Grande Prairie	1.0	0.056	>13.0	3.5	>11.0	0.043	0.087	0.043	0.092	0.022	0.005	0.006	1099	669	63	20
Edmonton Central	2.2	0.049	2.4	no data			0.096	0.052	0.147				no data			
Edmonton East	2.1	0.065	3.9	no data		0.020	0.161	0.072	0.232	no data		0.001	no data	182	no data	
Edmonton Northwest	1.9	0.068	2.7	no data			0.118	0.053	0.159	no data				197	95	no data
Calgary East	1.9	0.054	2.6	no data		0.009	0.126	0.058	0.184	no data		0.003	no data	no data		
Fort Saskatchewan	0.9	0.059	2.1	no data		0.015	0.031	0.033	0.064	0.013	no data	0.001	no data			
One-Hour Guideline	13.0	0.082	n/a	n/a	n/a	0.170	n/a	0.210	n/a	2.0	n/a	0.010	n/a	n/a	n/a	n/a

> indicates the pollutant exceeded the range of the instrument

Table 6 shows **one-hour average** air quality parameter concentrations and weather conditions at each monitoring location on the survey days April 8 to 13 in the County of Grande Prairie. The "*" indicates that less than 75% of data for a specific hour were available because of interference from MAML generator exhaust or instrument malfunction.

Table 6: One-hour Average Air Quality Parameter Concentrations and Weather Conditions at Each Monitoring Site (April 8 to 13, 1999)

Date	Monitoring Location and Time (MST)	CO	O_3	THC	CH_4	RHC	SO_2	NO	NO_2	NO_x	NH_3	TRS	H_2S	TSP	PM_{10}	$PM_{2.5}$	PAH	Temp.	RH	WSP	WDR
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm		ug/m3		ng/m3	oC	%	km/h	
8 Apr	Site # 2 (7 22 a m to 8 27 a m)	0 2	0 026	2 3	1 9	0 3	0 000	*	*	*	0 004	0 001	0 001	1	1	0	2	1 8	99	4	NW WSW
	Site # 3 (9 12 a m to 10 25 a m)	0 2	0 034	2 1	1 7	0 2	0 001	0 005	0 001	0 006	0 002	0 001	0 001	4	3	1	1	0 6	86	15	WNW
	Site#10 (10 55 a m to 11 55 a m)	0 1	0 035	2 1	1 7	0 2	0 000	0 004	0 000	0 004	0 001	0 001	0 001	7	6	1	1	0 6	88	22	NW
	Site # 9 (12 11 p m to 1 23 p m)	0 2	0 030	3 3	2 4	0 7	0 001	0 049	0 043	0 092	**	0 000	0 001	11	9	2	4	0 8	85	14	NW
	Site # 8 (1 29 p m to 2 50 p m)	0 2	0 037	2 1	1 7	0 2	0 002	0 003	0 000	0 004	0 003	0 002	0 001	14	12	2	1	1 8	92	17	NW
	Site # 6 (3 11 p m to 4 12 p m)	0 1	0 038	2 1	1 7	0 2	0 000	0 003	0 001	0 003	0 001	0 000	0 000	7	6	1	1	1 9	91	17	WNW
	Site # 4 (4 28 p m to 5 31 p m)	0 1	0 038	2 1	1 7	0 2	0 000	0 003	0 000	0 003	0 001	0 000	0 000	15	13	2	2	1 9	94	10	W
	Site # 5 (5 47 p m to 6 45 p m)	0 3	0 037	2 1	1 7	0 2	0 000	0 005	0 001	0 006	0 001	0 000	0 000	21	17	3	1	2 1	92	4	WSW ESE
9 Apr	Site #24 (7 55 a m to 8 55 a m)	0 1	0 035	2 1	1 7	0 2	0 001	0 002	0 001	0 004	0 001	0 002	0 001	3	2	0	2	0 8	70	4	SW
	Site #22 (9 11 a m to 10 10 a m)	0 1	0 037	2 1	1 7	0 2	0 001	0 002	0 001	0 003	0 001	0 002	0 001	2	1	0	2	1 5	73	10	SW
	Site #21 (10 21 a m to 11 21 a m)	0 1	0 039	2 1	1 7	0 2	0 011	0 003	0 001	0 004	0 001	0 005	0 006	1	1	0	2	0 6	69	12	WSW
	Site #23 (11 58 a m to 12 58 p m)	0 1	0 042	2 0	1 6	0 2	0 001	0 002	0 001	0 003	0 001	0 001	0 001	9	5	1	2	1 9	66	6	SW
	Site #25 (1 15 p m to 2 14 p m)	0 1	0 046	2 0	1 7	0 2	0 002	0 001	0 001	0 002	0 001	0 001	0 001	4	2	1	2	2 7	60	6	ESE WSW
	Site #20 (2 39 p m to 3 40 p m)	0 3	0 046	2 1	1 7	0 2	0 000	0 002	0 001	0 003	0 002	0 001	0 001	4	2	0	1	3 3	49	4	WSW
	Site #17 (4 05 p m to 5 07 p m)	0 2	0 046	2 1	1 7	0 2	0 000	0 001	0 002	0 003	0 001	0 001	0 001	7	4	1	3	2 0	61	13	WNW
	Site #11 (5 53 p m to 6 54 p m)	0 1	0 045	2 1	1 7	0 2	0 001	0 002	0 001	0 003	0 003	0 002	0 002	3	2	0	1	1 1	62	5	E
10 Apr	Site #19 (8 08 a m to 9 08 a m)	*	*	*	*	*	0 000	*	*	*	*	0 001	0 002	*	*	*	*	0 2	60	2	NE WSW
	Site #12 (9 24 a m to 10 26 a m)	0 1	0 043	2 1	1 7	0 2	0 000	0 002	0 001	0 003	0 001	0 001	0 001	3	2	0	1	0 1	59	18	WSW
	Site #18 (10 53 a m to 11 53 a m)	0 4	0 045	2 1	1 7	0 2	0 000	0 005	0 003	0 008	0 003	0 001	0 002	11	6	1	2	5 2	42	2	NE SW
	Site #16 (12 52 p m to 1 52 p m)	0 5	0 048	2 1	1 7	0 3	0 000	0 004	0 002	0 006	0 001	0 001	0 001	16	8	1	2	4 5	51	8	SSE
	Site #26 (1 59 p m to 3 00 p m)	0 4	0 052	1 9	1 6	0 2	0 001	0 002	0 003	0 005	0 001	0 001	0 001	35	18	2	1	6 4	35	17	WNW
	Site #14 (3 33 p m to 4 35 p m)	0 3	0 053	2 0	1 6	0 2	0 000	0 002	0 001	0 003	0 001	0 001	0 001	2	1	0	1	6 1	36	7	W
	Site #13 (4 45 p m to 5 48 p m)	0 5	0 052	2 0	1 6	0 2	0 000	0 001	0 001	0 002	0 001	0 001	0 001	3	2	0	1	4 8	40	22	WSW
11 Apr	Site # 3 (7 47 a m to 8 51 a m)	0 3	0 047	2 2	1 7	0 3	0 000	0 003	0 001	0 003	0 001	0 002	0 002	15	8	1	2	4 4	44	4	S
	Site #10 (9 13 a m to 10 15 a m)	0 3	0 039	2 2	1 8	0 2	0 000	0 004	0 005	0 009	0 001	0 001	0 001	53	32	3	2	3 6	55	5	ESE
	Site # 8 (10 43 a m to 11 44 a m)	0 6	0 042	2 1	1 7	0 2	0 000	0 006	0 004	0 010	0 001	0 001	0 002	5	4	1	2	5 9	41	3	S
	Site # 7 (2 10 p m to 1 12 p m)	0 3	0 052	1 9	1 6	0 2	0 000	0 001	0 001	0 002	0 001	0 001	0 001	63	24	2	1	7 1	36	8	SW
	Site # 6 (1 32 p m to 2 32 p m)	0 3	0 051	2 1	1 7	0 3	0 000	0 002	0 002	0 004	0 001	0 001	0 001	162	88	6	2	6 9	39	8	ESE
	Site # 4 (2 49 p m to 3 50 p m)	0 2	0 052	2 0	1 7	0 2	0 000	0 001	0 002	0 003	0 001	0 001	0 001	24	15	2	2	8 0	37	6	ESE
	Site # 5 (4 01 p m to 5 01 p m)	0 3	0 053	2 1	1 7	0 2	0 000	0 001	0 002	0 004	0 001	0 001	0 001	12	8	1	2	7 6	37	9	SE
	Site # 2 (5 32 p m to 6 32 p m)	0 3	0 049	2 0	1 6	0 2	0 000	0 002	0 003	0 005	0 001	0 001	0 001	49	34	6	2	8 5	36	3	SE
12 Apr	Site #24 (8 24 a m to 9 28 a m)	0 4	0 050	2 0	1 6	0 2	0 000	0 005	0 001	0 006	0 004	0 001	0 001	9	5	0	2	7 5	59	8	W
	Site #21 (9 50 a m to 10 50 a m)	0 2	0 052	2 0	1 6	0 2	0 000	0 004	0 001	0 005	0 001	0 000	0 000	3	2	0	1	7 3	63	13	SW
	Site #25 (11 23 a m to 12 27 p m)	0 2	0 052	1 9	1 6	0 2	0 000	0 002	0 001	0 003	0 001	0 000	0 000	4	2	0	1	6 7	55	24	WSW
	Site #18 (1 05 p m to 2 16 p m)	0 2	0 052	1 9	1 6	0 2	0 000	0 002	0 001	0 003	0 001	0 000	0 000	14	7	1	2	8 4	38	21	W
	Site #19 (2 24 p m to 3 23 p m)	0 3	0 052	2 6	1 6	0 9	0 000	0 003	0 001	0 004	0 001	0 001	0 000	217	110	8	2	7 3	43	26	WSW
	Site #12 (3 36 p m to 4 36 p m)	0 3	0 054	1 9	1 6	0 2	0 000	0 001	0 001	0 002	0 001	0 000	0 000	4	3	1	1	6 0	38	30	WSW
	Site #11 (4 52 p m to 6 18 p m)	0 3	0 051	2 5	2 0	0 3	0 001	0 002	0 001	0 003	0 001	0 001	0 000	60	35	4	2	5 5	47	22	W
13 Apr	Site # 9 (7 50 a m to 8 51 a m)	0 1	0 045	2 5	1 8	0 6	0 001	0 010	0 005	0 015	0 001	0 002	0 002	45	25	2	7	0 8	44	24	W
	Site #13a (9 35 a m to 10 35 a m)	0 4	0 041	2 1	1 8	0 2	0 001	0 004	0 001	0 005	0 008	0 002	0 002	19	9	1	4	1 5	40	36	W
	Site #13 (10 42 a m to 11 43 a m)	0 5	0 045	2 1	1 7	0 2	0 001	0 006	0 002	0 009	0 001	0 002	0 002	61	32	3	2	1 9	41	30	WNW
	Site #15 (12 01 p m to 12 25 p m)	0 1	0 047	2 0	1 7	0 2	0 000	0 002	0 001	0 003	0 001	0 001	0 001	7	3	0	1	5 0	29	12	SE
	Site # 6a (1 13 p m to 1 43 p m)	0 7	0 047	2 0	1 7	0 2	0 000	0 004	0 001	0 005	0 001	0 001	0 001	11	6	1	2	4 8	29	5	W
	Site # 6 (1 58 p m to 3 02 p m)	0 2	0 047	2 1	1 7	0 2	0 003	0 003	0 002	0 005	0 001	0 002	0 002	7	4	1	2	4 2	31	26	W
	Site #17 (3 38 p m to 4 38 p m)	0 1	0 047	2 1	1 7	0 2	0 000	0 001	0 000	0 001	0 001	0 002	0 001	94	46	4	1	4 6	41	27	WNW
	Site #20 (4 57 p m to 6 34 p m)	0 2	0 047	2 3	1 9	0 2	0 005	0 002	0 002	0 004	0 000	0 002	0 002	29	17	2	2	5 3	32	13	W

* Less than 75% of data available for one hour period due to interference from MAML generator exhaust or instrument malfunction

** Data not available due to NO_2 interference

List of Air Quality and Weather Parameters

CO carbon monoxide	RHC reactive hydrocarbons	NO_x total oxides of nitrogen	PAH polycyclic aromatic hydrocarbons	Temp ambient temperature
O_3 ozone	SO_2 sulphur dioxide	NH_3 ammonia	TSP total suspended particulates	RH relative humidity
THC total hydrocarbons	NO nitric oxide	TRS total reduced sulphur	PM_{10} inhalable particulates	WSP wind speed
CH_4 methane	NO_2 nitrogen dioxide	H_2S hydrogen sulphide	$PM_{2.5}$ respirable particulates	WDR wind direction

Table 7 shows **one-hour average** air quality parameter concentrations and weather conditions at each monitoring location on the survey days April 16 to 21 in the County of Grande Prairie. The "*" indicates that less than 75% of data for a specific hour were available because of interference from MAML generator exhaust or Instrument malfunction.

Table 7: One-hour Average Air Quality Parameter Concentrations and Weather Conditions at Each Monitoring Site (April 16 to 21, 1999)

Date	Monitoring Location and Time (MST)	CO	O_3	THC	CH_4	RHC	SO_2	NO	NO_2	NO_x	NH_3	TRS	H_2S	TSP	PM_{10}	$PM_{2.5}$	PAH	Temp.	RH	WSP	WDR
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm		ug/m3		ng/m^3	°C	%	km/h	
16-Apr	Site #13 (8:38 a.m. to 9:42 a.m.)	0.3	0.032	3.0	2.1	0.6	0.001	0.003	0.004	0.008	0.002	0.001	0.001	71	48	5	6	6	58	3	SSE
	Site #14 (10:28 a.m. to 11:29 a.m.)	0.1	0.045	2.1	1.7	0.2	0.011	0.000	0.001	0.001	0.001	0.001	0.001	25	18	3	14	14	31	8	SW
	Site #16 (11:52 a.m. to 12:54 p.m.)	0.1	0.042	3.3	2.0	1.1	0.001	0.002	0.002	0.004	0.002	0.001	0.001	110	69	7	15	15	34	7	SSW
	Site #20 (1:25 p.m. to 2:29 p.m.)	0.3	0.049	2.1	1.7	0.2	0.043	0.000	0.001	0.002	0.001	0.001	0.001	39	28	4	18	18	25	10	WSW
	Site #25 (3:02 p.m. to 4:00 p.m.)	0.3	0.046	2.0	1.7	0.2	0.000	0.000	0.002	0.002	0.000	0.001	0.001	24	19	4	19	19	29	17	WSW
	Site #21 (4:33 p.m. to 5:33 p.m.)	0.2	0.046	2.1	1.7	0.2	0.000	0.000	0.002	0.002	0.000	0.001	0.000	50	34	5	20	20	28	7	WSW
	Site #24 (5:55 p.m. to 6:54 p.m.)	0.3	0.039	2.2	1.8	0.2	0.001	0.002	0.008	0.010	0.000	0.000	0.000	38	25	4	18	18	28	7	WNW
17-Apr	Site # 8 (8:59 a.m. to 9:59 a.m.)	0.1	0.047	2.0	1.7	0.2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14	9	1	1	11	40	10	ENE
	Site # 9 (10:16 a.m. to 11:17 a.m.)	0.1	0.043	2.1	1.7	0.2	0.000	0.003	0.004	0.007	0.001	0.000	0.000	50	34	4	2	14	38	6	S
	Site #10 (11:38 a.m. to 12:45 p.m.)	0.1	0.051	2.1	1.7	0.2	0.001	0.001	0.003	0.003	0.008	0.000	0.000	100	64	6	2	15	34	6	S
	Site #11 (1:01 p.m. to 2:02 p.m.)	0.1	0.052	2.0	1.6	0.2	0.000	0.000	0.001	0.000	0.001	0.000	0.000	50	33	3	2	15	34	8	SE
	Site #17 (2:24 p.m. to 3:25 p.m.)	0.3	0.054	2.0	1.7	0.2	0.000	0.001	0.001	0.002	0.000	0.000	0.000	17	12	2	2	17	34	6	SSW
	Site #18 (3:46 p.m. to 4:50 p.m.)	0.2	0.049	2.0	1.7	0.2	0.001	0.003	0.005	0.008	0.001	0.001	0.000	18	12	2	2	17	37	9	SE
	Site #19 (5:17 p.m. to 6:19 p.m.)	0.1	0.050	2.0	1.6	0.2	0.000	0.002	0.002	0.003	0.001	0.000	0.000	145	92	10	3	17	35	9	SE
18-Apr	Site #12 (7:55 a.m. to 9:07 a.m.)	*	*	*	*	*	0.001	*	*	*	*	*	*	*	*	*	*	8	66	1	NNE-SSE
	Site # 1 (10:15 a.m. to 11:21 a.m.)	0.2	0.025	2.8	2.2	0.4	0.000	0.000	0.002	0.002	0.022	0.002	0.002	200	137	16	2	11	60	2	W
	Site # 3 (12:23 p.m. to 1:32 p.m.)	0.1	0.052	1.9	1.6	0.2	0.001	0.000	0.001	0.001	0.004	0.001	0.002	18	12	2	1	15	42	12	W
	Site # 4 (1:54 p.m. to 2:54 p.m.)	0.1	0.051	2.0	1.6	0.2	0.000	0.000	0.000	0.000	0.001	0.001	0.002	22.6	15.9	2.6	1.4	13	52	13	SW
	Site # 6 (3:16 p.m. to 4:18 p.m.)	0.2	0.053	2.0	1.6	0.2	0.004	0.005	0.009	0.009	0.006	0.001	0.002	1099	669	63	9	15	42	12	SW
	Site # 5 (4:36 p.m. to 5:41 p.m.)	0.1	0.053	1.9	1.6	0.2	0.000	0.000	0.001	0.000	0.001	0.001	0.002	9	6	2	1	14	42	13	SW
	Site # 2 (6:12 p.m. to 7:12 p.m.)	0.2	0.052	1.9	1.6	0.2	0.000	0.000	0.001	0.000	0.001	0.001	0.001	12	8	2	2	14	41	4	WSW
19-Apr	Site #13 (8:42 a.m. to 9:40 a.m.)	0.3	0.053	2.1	1.7	0.2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8	5	1	10	10	49	12	W
	Site #14 (9:48 a.m. to 10:48 a.m.)	0.3	0.049	2.0	1.6	0.2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	25	14	2	12	12	55	11	WNW
	Site #26 (11:06 a.m. to 12:22 p.m.)	1.0	0.046	>13.0	3.5	>10.9	0.006	0.003	0.005	0.009	0.001	0.000	0.000	62	33	3	12	12	54	13	WNW
	Site #16 (12:34 p.m. to 1:35 p.m.)	0.1	0.043	2.4	1.9	0.5	0.000	0.002	0.005	0.006	0.001	0.000	0.000	51	38	4	11	11	65	18	NW
	Site #20 (2:14 p.m. to 3:14 p.m.)	0.3	0.046	1.9	1.6	0.2	0.014	0.001	0.001	0.002	0.000	0.001	0.000	48	33	4	12	12	60	13	NNW-S
	Site #17 (4:47 p.m. to 5:49 p.m.)	0.2	0.045	2.1	1.8	0.3	0.000	0.002	0.000	0.001	0.001	0.000	0.000	6	5	1	12	12	63	17	NNE
20-Apr	Site # 8 (7:58 a.m. to 9:02 a.m.)	0.4	0.044	2.0	1.7	0.2	0.000	0.000	0.001	0.000	0.000	0.000	0.000	38	19	2	2	8	53	5	ENE-NNE
	Site # 5 (9:17 a.m. to 10:17 a.m.)	0.5	0.044	2.0	1.7	0.2	0.001	0.000	0.002	0.001	0.000	0.000	0.000	18	12	1	2	10	45	4	NE-WNW
	Site #10 (10:33 a.m. to 11:35 a.m.)	0.4	0.047	1.9	1.6	0.2	0.001	0.000	0.002	0.001	0.000	0.000	0.001	195	116	10	3	13	37	8	ENE-ESE
	Site #12 (12:06 p.m. to 1:07 p.m.)	0.3	0.051	1.9	1.6	0.2	0.001	0.000	0.001	0.001	0.000	0.001	0.001	20	13	2	1	14	35	11	E
	Site #19 (1:25 p.m. to 2:29 p.m.)	0.3	0.048	2.2	1.7	0.5	0.001	0.006	0.006	0.012	0.003	0.003	0.003	891	655	60	7	15	32	9	NE
	Site #18 (2:36 p.m. to 3:39 p.m.)	0.2	0.053	1.9	1.6	0.2	0.001	0.000	0.000	0.000	0.000	0.001	0.000	17	11	2	1	15	31	12	NNE-SSW
	Site # 3 (4:12 p.m. to 5:22 p.m.)	0.2	0.044	2.5	2.4	0.3	0.001	0.087	0.023	0.091	0.004	0.001	0.001	65	47	8	2	14	33	9	SSE-NNE
	Site # 2 (5:43 p.m. to 7:06 p.m.)	0.1	0.042	1.9	1.6	0.2	0.000	0.000	0.001	0.002	0.000	0.001	0.000	15	11	2	3	11	69	12	SE-ESE
21-Apr	Site # 4 (8:47 a.m. to 9:50 a.m.)	0.2	0.044	2.0	1.7	0.2	0.001	0.000	0.001	0.001	0.003	0.000	0.001	7	4	1	2	10	72	10	E
	Site # 6 (10:13 a.m. to 11:27 a.m.)	0.2	0.052	1.9	1.6	0.2	0.004	0.000	0.001	0.000	0.002	0.000	0.001	13	6	1	1	12	50	6	SE
	Site # 9 (12:00 p.m. to 1:03 p.m.)	0.0	0.056	1.9	1.6	0.2	0.001	0.000	0.003	0.002	0.001	0.000	0.000	9	6	1	2	12	36	15	SE
	Site #11 (1:17 p.m. to 2:21 p.m.)	0.0	0.056	2.7	1.7	1.0	0.001	0.000	0.001	0.000	0.001	0.000	0.000	38	23	3	1	13	34	12	ESE
	Site #26 (3:09 p.m. to 4:12 p.m.)	0.0	0.056	2.4	1.7	0.7	0.001	0.000	0.001	0.000	0.000	0.000	0.000	21	12	2	2	12	33	6	NW

* Less than 75% of data available for one hour period due to interference from MAML generator exhaust or instrument malfunction

> indicates the pollutant exceeded the range of the instrument

List of Air Quality and Weather Parameters

- CO - carbon monoxide
- O_3 - ozone
- THC - total hydrocarbons
- CH_4 - methane
- RHC - reactive hydrocarbons
- SO_2 - sulphur dioxide
- NO - nitric oxide
- NO_2 - nitrogen dioxide
- NO_x - total oxides of nitrogen
- NH_3 - ammonia
- TRS - total reduced sulphur
- H_2S - hydrogen sulphide
- PAH - polycyclic aromatic hydrocarbons
- TSP - total suspended particulates
- PM_{10} - inhalable particulates
- $PM_{2.5}$ - respirable particulates
- Temp. - ambient temperature
- RH - relative humidity
- WSP - wind speed
- WDR - wind direction

Table 8 shows **five-minute peak** air quality parameter concentrations and weather conditions at each monitoring location on the survey days April 8 to 13 in the County of Grande Prairie. The "*" indicates that data were not available for a specific five-minute period because of interference from MAML generator exhaust or instrument malfunction.

Table 8: Five-minute Peak Air Quality Parameter Concentrations at Each Monitoring Site (April 8 to 13, 1999)

Date	Monitoring Location and Time (MST)	CO	O_3	THC	CH_4	RHC	SO_2	NO	NO_2	NO_X	NH_3	TRS	H_2S	TSP	PM_{10}	$PM_{2.5}$	PAH
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ug/m3			ng/m³
8-Apr	Site # 2 (7:22 a.m. to 8:27 a.m.)	0.3	0.029	2.9	2.2	0.4	0.000	0.007	0.007	0.014	0.015	0.001	0.001	2	1	0	2
	Site # 3 (9:12 a.m. to 10:25 a.m.)	0.3	0.035	2.1	1.7	0.2	0.002	0.007	0.006	0.011	0.003	0.002	0.002	12	9	2	2
	Site #10 (10:55 a.m. to 11:55 a.m.)	0.2	0.035	2.1	1.7	0.2	0.000	0.004	0.001	0.004	0.002	0.003	0.003	12	10	2	2
	Site # 9 (12:11 p.m. to 1:23 p.m.)	0.4	0.033	4.6	3.3	2.1	0.001	0.132	0.171	0.242	**	0.001	0.003	36	27	3	15
	Site # 8 (1:29 p.m. to 2:50 p.m.)	0.2	0.038	2.1	1.7	0.3	0.003	0.003	0.001	0.004	0.003	0.002	0.001	25	19	4	2
	Site # 6 (3:11 p.m. to 4:12 p.m.)	0.1	0.038	2.1	1.7	0.2	0.001	0.005	0.001	0.005	0.002	0.001	0.000	17	14	2	2
	Site # 4 (4:28 p.m. to 5:31 p.m.)	0.2	0.038	2.1	1.7	0.2	0.000	0.004	0.001	0.004	0.002	0.001	0.000	34	26	3	2
	Site # 5 (5:47 p.m. to 6:45 p.m.)	0.6	0.038	2.2	1.7	0.3	0.001	0.006	0.006	0.010	0.004	0.001	0.001	35	28	5	2
9-Apr	Site #24 (7:55 a.m. to 8:55 a.m.)	0.1	0.037	2.1	1.7	0.2	0.001	0.003	0.002	0.005	0.002	0.002	0.002	4	2	1	5
	Site #22 (9:11 a.m. to 10:10 a.m.)	0.1	0.038	2.2	1.7	0.2	0.001	0.003	0.002	0.005	0.002	0.002	0.001	8	4	0	2
	Site #21 (10:21 a.m. to 11:21 a.m.)	0.3	0.039	2.1	1.7	0.2	0.039	0.003	0.002	0.005	0.002	0.015	0.019	3	2	1	4
	Site #23 (11:58 a.m. to 12:58 p.m.)	0.2	0.043	2.0	1.7	0.2	0.001	0.006	0.005	0.007	0.002	0.002	0.002	28	15	2	4
	Site #25 (1:15 p.m. to 2:14 p.m.)	0.2	0.046	2.1	1.7	0.2	0.007	0.002	0.001	0.003	0.002	0.001	0.001	7	4	1	2
	Site #20 (2:39 p.m. to 3:40 p.m.)	0.6	0.046	2.1	1.7	0.3	0.001	0.005	0.002	0.005	0.009	0.002	0.002	9	3	0	3
	Site #17 (4:05 p.m. to 5:07 p.m.)	0.2	0.049	2.4	1.9	0.5	0.001	0.002	0.010	0.011	0.004	0.002	0.002	23	12	1	4
	Site #11 (5:53 p.m. to 6:54 p.m.)	0.4	0.046	2.4	1.9	0.4	0.001	0.005	0.001	0.005	0.017	0.002	0.002	7	3	0	2
10-Apr	Site #19 (8:08 a.m. to 9:08 a.m.)	0.6	0.040	2.4	1.8	0.4	0.001	0.028	0.018	0.045	0.012	0.002	0.003	806	391	19	3
	Site #12 (9:24 a.m. to 10:26 a.m.)	0.2	0.044	2.1	1.7	0.2	0.000	0.002	0.002	0.003	0.002	0.001	0.001	4	2	0	2
	Site #18 (10:53 a.m. to 11:53 a.m.)	0.5	0.047	2.2	1.7	0.3	0.000	0.012	0.009	0.016	0.013	0.002	0.003	56	36	3	5
	Site #16 (12:52 p.m. to 1:52 p.m.)	0.8	0.050	2.3	1.7	0.5	0.001	0.007	0.006	0.013	0.002	0.002	0.002	42	23	2	6
	Site #26 (1:59 p.m. to 3:00 p.m.)	0.5	0.054	2.0	1.6	0.3	0.003	0.004	0.010	0.014	0.003	0.001	0.001	214	127	11	2
	Site #14 (3:33 p.m. to 4:35 p.m.)	0.4	0.053	2.2	1.7	0.4	0.000	0.004	0.002	0.006	0.003	0.002	0.002	4	2	1	2
	Site #13 (4:45 p.m. to 5:48 p.m.)	0.7	0.054	2.1	1.7	0.8	0.000	0.002	0.001	0.003	0.002	0.001	0.001	10	5	1	1
11-Apr	Site # 3 (7:47 a.m. to 8:51 a.m.)	0.6	0.050	2.9	2.0	0.8	0.000	0.004	0.002	0.005	0.002	0.002	0.003	158	81	7	4
	Site #10 (9:13 a.m. to 10:15 a.m.)	0.4	0.040	2.4	1.9	0.3	0.000	0.005	0.008	0.013	0.001	0.002	0.002	77	46	5	3
	Site # 8 (10:43 a.m. to 11:44 a.m.)	0.8	0.045	2.2	1.8	0.2	0.000	0.011	0.014	0.025	0.004	0.001	0.002	10	5	1	2
	Site # 7 (2:10 p.m. to 1:12 p.m.)	0.5	0.053	2.0	1.6	0.2	0.000	0.002	0.002	0.004	0.002	0.001	0.002	520	184	8	2
	Site # 6 (1:32 p.m. to 2:32 p.m.)	0.3	0.052	2.5	1.8	0.6	0.000	0.004	0.011	0.015	0.001	0.001	0.002	1853	996	59	2
	Site # 4 (2:49 p.m. to 3:50 p.m.)	0.3	0.054	2.1	1.7	0.2	0.000	0.002	0.003	0.004	0.001	0.002	0.001	56	37	4	2
	Site # 5 (4:01 p.m. to 5:01 p.m.)	0.3	0.055	2.1	1.7	0.3	0.000	0.001	0.003	0.004	0.001	0.001	0.001	19	11	2	2
	Site # 2 (5:32 p.m. to 6:32 p.m.)	0.4	0.051	2.0	1.7	0.2	0.000	0.004	0.004	0.007	0.002	0.001	0.001	191	135	29	10
12-Apr	Site #24 (8:24 a.m. to 9:28 a.m.)	0.7	0.052	2.1	1.7	0.2	0.001	0.007	0.001	0.008	0.007	0.001	0.002	34	18	1	2
	Site #21 (9:50 a.m. to 10:50 a.m.)	0.3	0.053	2.0	1.7	0.2	0.000	0.005	0.001	0.006	0.002	0.001	0.001	7	3	1	2
	Site #25 (11:23 a.m. to 12:27 p.m.)	0.3	0.052	1.9	1.6	0.2	0.000	0.003	0.002	0.004	0.002	0.001	0.001	21	11	1	2
	Site #18 (1:05 p.m. to 2:16 p.m.)	0.3	0.053	2.0	1.6	0.2	0.000	0.003	0.001	0.004	0.002	0.001	0.000	127	61	5	3
	Site #19 (2:24 p.m. to 3:23 p.m.)	0.4	0.053	5.0	1.6	3.3	0.001	0.004	0.003	0.007	0.001	0.001	0.001	1254	595	37	3
	Site #12 (3:36 p.m. to 4:36 p.m.)	0.4	0.055	1.9	1.6	0.2	0.000	0.002	0.001	0.002	0.002	0.001	0.000	7	6	1	2
	Site #11 (4:52 p.m. to 6:18 p.m.)	0.6	0.053	4.0	3.1	1.1	0.002	0.002	0.001	0.004	0.002	0.002	0.001	269	182	19	3
13-Apr	Site # 9 (7:50 a.m. to 8:51 a.m.)	0.1	0.046	5.4	1.9	3.5	0.002	0.026	0.014	0.040	0.003	0.002	0.002	112	66	5	12
	Site #13a (9:35 a.m. to 10:35 a.m.)	0.6	0.043	2.3	2.0	0.4	0.001	0.005	0.002	0.007	0.020	0.002	0.002	74	37	3	7
	Site #13 (10:42 a.m. to 11:43 a.m.)	1.7	0.047	2.3	1.9	0.4	0.001	0.016	0.009	0.020	0.003	0.002	0.002	475	284	21	6
	Site #15 (12:01 p.m. to 12:25 p.m.)	0.1	0.048	2.0	1.7	0.2	0.000	0.003	0.001	0.003	0.002	0.002	0.002	23	11	1	2
	Site # 6a (1:13 p.m. to 1:43 p.m.)	1.1	0.047	2.0	1.7	0.2	0.000	0.005	0.002	0.007	0.003	0.002	0.002	17	10	1	3
	Site # 6 (1:58 p.m. to 3:02 p.m.	0.4	0.048	2.1	1.8	0.3	0.009	0.003	0.003	0.006	0.002	0.002	0.003	33	14	4	3
	Site #17 (3:38 p.m. to 4:38 p.m.)	0.2	0.048	2.4	1.7	0.5	0.000	0.002	0.000	0.002	0.001	0.002	0.001	61	17	2	2
	Site #20 (4:57 p.m. to 6:34 p.m.)	0.3	0.049	2.6	2.0	0.5	0.020	0.003	0.005	0.007	0.001	0.002	0.002	29	17	2	6

* No data available for five minute period due to interference from MAML generator exhaust or instrument malfunction.

** Data not available due to NOx interference.

List of Air Quality Parameters

CO - carbon monoxide
O_3 - ozone
THC - total hydrocarbons
CH_4 - methane
RHC - reactive hydrocarbons
SO_2 - sulphur dioxide
NO - nitric oxide
NO_2 - nitrogen dioxide
NO_X - total oxides of nitrogen
NH_3 - ammonia
TRS - total reduced sulphur
H_2S - hydrogen sulphide
PAH - polycyclic aromatic hydrocarbons
TSP - total suspended particulates
PM_{10} - inhalable particulates
$PM_{2.5}$ - respirable particulates

Table 9 shows **five-minute peak** air quality parameter concentrations and weather conditions at each monitoring location on the survey days April 16 to 21 in the County of Grande Prairie. The "*" indicates that data were not available for a specific five-minute period because of interference from MAML generator exhaust or instrument malfunction.

Table 9: Five-minute Peak Air Quality Parameter Concentrations at Each Monitoring Site (April 16 to 21, 1999)

Date	Monitoring Location and Time (MST)	CO	O_3	THC	CH_4	RHC	SO_2	NO	NO_2	NO_X	NH_3	TRS	H_2S	TSP	PM_{10}	$PM_{2.5}$	PAH
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ug/m3			ng/m^3
16-Apr	Site #13 (8:38 a.m. to 9:42 a.m.)	0.5	0.033	3.9	2.6	1.0	0.001	0.008	0.006	0.011	0.004	0.001	0.001	120	79	8	18
	Site #14 (10:28 a.m. to 11:29 a.m.)	0.3	0.046	2.2	1.7	0.2	0.017	0.000	0.001	0.002	0.002	0.001	0.001	49	33	4	2
	Site #16 (11:52 a.m. to 12:54 p.m.)	0.3	0.043	5.8	2.8	3.2	0.001	0.009	0.004	0.006	0.005	0.001	0.001	434	278	26	3
	Site #20 (1:25 p.m. to 2:29 p.m.)	0.4	0.050	2.1	1.8	0.2	0.069	0.001	0.002	0.004	0.002	0.001	0.002	141	104	12	5
	Site #25 (3:02 p.m. to 4:00 p.m.)	0.4	0.047	2.0	1.7	0.2	0.000	0.000	0.004	0.003	0.001	0.001	0.002	75	64	12	2
	Site #21 (4:33 p.m. to 5:33 p.m.)	0.3	0.047	2.1	1.7	0.2	0.003	0.001	0.005	0.006	0.001	0.001	0.002	305	189	19	2
	Site #24 (5:55 p.m. to 6:54 p.m.)	0.5	0.046	2.4	1.9	0.4	0.002	0.006	0.019	0.025	0.001	0.001	0.000	195	116	9	2
17-Apr	Site # 8 (8:59 a.m. to 9:59 a.m.)	0.2	0.049	2.0	1.7	0.2	0.000	0.003	0.001	0.001	0.001	0.000	0.000	41	23	2	2
	Site # 9 (10:16 a.m. to 11:17 a.m.)	0.1	0.047	2.4	1.8	0.4	0.001	0.015	0.017	0.032	0.002	0.000	0.000	147	102	11	3
	Site #10 (11:38 a.m. to 12:45 p.m.)	0.2	0.058	2.1	1.7	0.2	0.001	0.002	0.014	0.016	0.028	0.000	0.000	435	270	24	3
	Site #11 (1:01 p.m. to 2:02 p.m.)	0.2	0.052	2.0	1.7	0.2	0.000	0.001	0.003	0.003	0.005	0.000	0.000	449	292	24	3
	Site #17 (2:24 p.m. to 3:25 p.m.)	0.4	0.055	2.1	1.7	0.3	0.000	0.002	0.003	0.004	0.001	0.001	0.001	22	15	3	2
	Site #18 (3:46 p.m. to 4:50 p.m.)	0.3	0.052	2.2	1.8	0.4	0.003	0.010	0.015	0.025	0.002	0.001	0.001	30	19	2	2
	Site #19 (5:17 p.m. to 6:19 p.m.)	0.2	0.051	2.2	1.7	0.4	0.000	0.003	0.007	0.008	0.001	0.001	0.000	501	296	27	6
18-Apr	Site #12 (7:55 a.m. to 9:07 a.m.)	0.3	0.028	2.5	1.9	0.3	0.001	0.003	0.004	0.004	0.002	0.002	0.004	121	70	5	2
	Site # 1 (10:15 a.m. to 11:21 a.m.)	0.5	0.029	3.3	2.7	1.0	0.000	0.002	0.005	0.006	0.055	0.002	0.003	497	345	42	3
	Site # 3 (12:23 p.m. to 1:32 p.m.)	0.2	0.053	2.0	1.6	0.2	0.002	0.001	0.011	0.011	0.007	0.002	0.002	55	33	4	2
	Site # 4 (1:54 p.m. to 2:54 p.m.)	0.1	0.056	2.1	1.8	0.2	0.000	0.000	0.001	0.000	0.002	0.002	0.002	130	84	9	2
	Site # 6 (3:16 p.m. to 4:18 p.m.)	0.2	0.054	2.1	1.7	0.2	0.024	0.017	0.085	0.084	0.037	0.002	0.003	2519	1455	121	23
	Site # 5 (4:36 p.m. to 5:41 p.m.)	0.1	0.054	2.0	1.6	0.2	0.000	0.000	0.001	0.001	0.002	0.001	0.003	22	12	2	2
	Site # 2 (6:12 p.m. to 7:12 p.m.)	0.3	0.054	2.0	1.6	0.2	0.000	0.000	0.002	0.002	0.002	0.001	0.002	19	14	2	2
19-Apr	Site #13 (8:42 a.m. to 9:40 a.m.)	0.5	0.056	2.1	1.7	0.2	0.001	0.000	0.001	0.000	0.001	0.001	0.001	53	33	3	3
	Site #14 (9:48 a.m. to 10:48 a.m.)	0.4	0.050	2.0	1.6	0.2	0.000	0.002	0.001	0.000	0.001	0.000	0.000	109	58	5	2
	Site #26 (11:06 a.m. to 12:22 p.m.)	1.9	0.050	>20.0	4.8	>20.0	0.012	0.008	0.013	0.017	0.003	0.000	0.000	389	182	11	142
	Site #16 (12:34 p.m. to 1:35 p.m.)	0.3	0.047	3.0	2.2	0.7	0.001	0.004	0.013	0.015	0.005	0.001	0.001	211	161	14	3
	Site #20 (2:14 p.m. to 3:14 p.m.)	0.4	0.049	2.1	1.7	0.3	0.062	0.002	0.006	0.008	0.001	0.001	0.001	203	145	17	2
	Site # 17 (4:47 p.m. to 5:49 p.m.)	0.3	0.046	2.7	2.3	0.7	0.001	0.008	0.001	0.001	0.004	0.001	0.000	18	13	2	2
20-Apr	Site # 8 (7:58 a.m. to 9:02 a.m.)	0.5	0.044	2.0	1.7	0.2	0.001	0.001	0.002	0.002	0.000	0.001	0.001	336	157	9	2
	Site # 5 (9:17 a.m. to 10:17 a.m.)	0.6	0.045	2.0	1.7	0.3	0.002	0.000	0.004	0.003	0.000	0.001	0.001	91	55	5	2
	Site #10 (10:33 a.m. to 11:25 a.m.)	0.5	0.049	2.0	1.7	0.3	0.002	0.001	0.005	0.005	0.000	0.001	0.001	1063	626	54	5
	Site #12 (12:06 p.m. to 1:07 p.m.)	0.6	0.052	1.9	1.6	0.2	0.002	0.001	0.002	0.002	0.001	0.001	0.001	42	26	3	2
	Site #19 (1:25 p.m. to 2:29 p.m.)	0.4	0.052	3.1	1.7	1.4	0.003	0.022	0.019	0.040	0.022	0.012	0.011	5478	3862	369	23
	Site #18 (2:36 p.m. to 3:39 p.m.)	0.3	0.054	1.9	1.6	0.2	0.001	0.000	0.001	0.000	0.000	0.001	0.000	25	14	1	2
	Site # 3 (4:12 p.m. to 5:22 p.m.)	0.4	0.054	4.6	4.8	1.2	0.003	0.568	0.164	0.389	0.029	0.002	0.004	162	124	28	5
	Site # 2 (5:43 p.m. to 7:06 p.m.)	0.2	0.044	1.9	1.6	0.2	0.000	0.003	0.002	0.005	0.000	0.001	0.000	31	22	3	11
21-Apr	Site # 4 (8:47 a.m. to 9:50 a.m.)	0.2	0.047	2.0	1.7	0.2	0.001	0.001	0.002	0.002	0.004	0.001	0.001	32	17	2	2
	Site # 6 (10:13 a.m. to 11:27 a.m.)	0.3	0.053	1.9	1.7	0.2	0.011	0.000	0.001	0.000	0.003	0.001	0.001	27	11	1	2
	Site # 9 (12:00 p.m. to 1:03 p.m.)	0.1	0.058	1.9	1.6	0.2	0.001	0.002	0.008	0.009	0.002	0.001	0.001	19	14	2	2
	Site #11 (1:17 p.m. to 2:21 p.m.)	0.0	0.058	4.5	1.9	2.9	0.002	0.000	0.001	0.000	0.002	0.001	0.001	190	110	11	2
	Site #26 (3:09 p.m. to 4:12 p.m.)	0.2	0.056	2.8	1.8	1.0	0.001	0.001	0.001	0.001	0.000	0.001	0.000	44	29	3	3

* No data available for five minute period due to interference from MAML generator exhaust or instrument malfunction

> indicates the pollutant exceeded the range of the instrument

List of Air Quality Parameters

CO - carbon monoxide
O_3 - ozone
THC - total hydrocarbons
CH_4 - methane
RHC - reactive hydrocarbons
SO_2 - sulphur dioxide
NO - nitric oxide
NO_2 - nitrogen dioxide
NO_X - total oxides of nitrogen
NH_3 - ammonia
TRS - total reduced sulphur
H_2S - hydrogen sulphide
PAH - polycyclic aromatic hydrocarbons
TSP - total suspended particulates
PM_{10} - inhalable particulates
$PM_{2.5}$ - respirable particulates